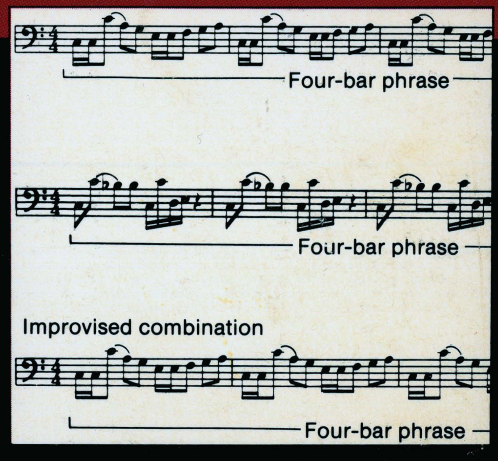
ELECTRIC BASS GUITAR



Carol Kaye, Chuck Rainey, Stanley Clarke, Herb Mickman, Jeff Berlin, and other outstanding working bassists present a definitive approach to the theory, practice and performance of electric bass guitar.

A volume in the **Guitar Player Basic Library**

Compiled by the editors of Guitar Player Magazine

ELECTRIC BASS GUITAR

edited by **JON SIEVERT**

The Guitar Player Basic Library
By the editors of Guitar Player Magazine

GPI Publications
Cupertino, California

HAL LEONARD PUBLISHING CORPORATION
8112 West Bluemound Road, Milwaukee, WI 53213

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PHOTO CREDITS

Cover: left: Jon Sievert; lower right: Darryl Pitt.

Page vi: courtesy of manufacturer;
10: Mark Mander;
24, 35 Jon Sievert;
39, 40: Mark MacLaren;
48: Mark Mander;
52: Christopher Harting.

Library of Congress Catalog Card Number:
84-81605

ISBN: 0-88188-292-5

Printed in the United States of America

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1. CHOOSING AN INSTRUMENT

INTRODUCTION

Guitar Player magazine has published a column devoted exclusively to the bass guitar in every issue for over ten years. During this period, a small but distinguished roster of working bassists has made learned contributions to the theory, practice, and performance of bass guitar that are as valid today as when first written.

Unfortunately, many of the back issues of Guitar Player are out of print now, so the only way to preserve and present this invaluable material has been to reassemble, re-edit, and redesign the best of those invaluable columns into this updated single volume, one in the series of esssential collections that comprise the Guitar Player Basic Library.

Guitar Player's first bass columnist was Carol Kaye, one of the two or three top studio bassists whose film, television, and recording credits number in the hundreds, including pioneering, innovative work with Count Basie, Ray Charles, Roberta Flack, Cannonball Adderly and the Beach Boys. Carol is also a prolific author and has produced some of the finest bass guitar instruction books ever printed.

Carol Kaye's column ran for more than a year before she handed over her duties to another outstanding studio bassist, Chuck Rainey. At the time, Rainey was arguably the most popular electric bassist in the business. His album credits include work with artists like Sergio Mendes, Joe Cocker, King Curtis, Albert King, Aretha Franklin, and the Jackson Five. His film credits include "Midnight Cowboy" and "Lady Sings The Blues" and anyone who has watched "M*A*S*H," "Hawaii Five-O," or "Sanford And Son" on television has heard his rock-steady bass lines.

When Rainey's studio demands finally overwhelmed his column deadlines, Stanley Clarke stepped in briefly to offer the unique perspective he has gained developing his very unique style while working with such giants as Chick Corea. In October of 1977, Herb Mickman published his first column titled Bass Guitar Forum and it has appeared in nearly every issue of GP since. Mickman, too, is a longstanding studio veteran whose playing experience covers 25 years and encompasses virtually every professional musical activity. Herb has worked and recorded with a distinguished roster of musical giants including Joe Pass, John Coltrane, Tommy Dorsey, Kenny Burrell, Barney Kessel, Chick Corea, Woody Herman, and Carmen McRae.

Last year, *Guitar Player* decided to add a second column devoted to the electric bass and tapped the young virtuoso Jeff Berlin to offer his perspective on the modern music scene. Berlin draws from his experience of working with such pointmen in modern electric music as drummer Bill Bruford, sax man Dave Liebman, and keyboardist Patrick Moraz. He is currently a member of guitarist Allan Holdsworth's I.O.U. as well as his own Jeff Berlin Band.

We've also included in this volume several feature articles and a few occasional columns from a number of other working professional bassists. All of which has been organized in a manner which we hope can either be used systematically as a program of instruction or picked through at random to see what's of particular interest. Each column is really an individual lesson in itself, offering many hours of work.

ELECTRIC BASS GUITAR does not offer everything there is to know about the art of electric bass and consequently many suggestions for further study are offered throughout. But if you can learn and assimilate all there is in this book, you'll definitely be able to handle yourself in most musical situations.

Jon Sievert

Note *You will see that the style of music notation changes occasionally from column to column. Since these articles are drawn from more than 10 years of* Guitar Player, *the production of the examples reflects the changing style of the magazine's music production department. In addition, the chord symbols used for specific chords change from article to article, reflecting the different usages of the author/artists. In all other respects, the differences between the examples are only cosmetic.*

FOREWORD

I'd like to start out by congratulating you for playing the bass, because there isn't an instrument whose sound and function is going through such a positive radical change. Ours is one of the hippest, freshest, most exciting-sounding axes in music today.

Although for a long time the guitar, keyboard, and percussion instruments have enjoyed considerable popularity in and out of the professional musical world, the bass guitar has only been recently introduced and used by musicians who are truly appreciative of low-end sound. In fact, the electric bass dates back about 35 years, while the guitar, keyboard, and percussion instruments (and their music) date back hundreds of years.

During the '50s, the bass guitar was slowly introduced into studio rhythm sections. Monk Montgomery (the brother of famed jazz guitarist Wes Montgomery) is recognized as the first person whose main instrument was the electric bass. Leo Fender's Precision and Jazz basses, which were introduced at the dawn of electric bass technology, became the standard instruments used by bass players.

The '60s introduced the more up-front style of playing. The bass developed into an integral sound within the rhythm section. Names such as Jack Bruce, Tim Bogert, Larry Graham, and Jack Casady are still synonymous with greatness when speaking about the first pioneers of bass playing. Gibson, Gretsch, and other basses began to make inroads with the buying public. Walls of amplifiers became routine.

Some bands were so loud that recording studios had a hard time accommodating all their amplifiers, and alternate recording facilities had to be employed. Blue Cheer, a trio with concussive volume levels, had to record one of their records at the end of a pier in Manhattan. Cream, probably the finest trio that rock ever produced, increased their amp loads until finally, at one outdoor concert in England, they boasted a system consisting of 110 Marshall cabinets.

All in all, though, the '60s was a good time for rock, jazz, and soul music. And it sure was an interesting time for bass players. I got my first bass, by the way, in 1967 from money I saved from my newspaper route. And with Tim Bogert and Jack Bruce doing records every other month. I had a lot of material to work on.

The '70s, however, should be called the decade of the true emergence of the electric bass, thanks primarily to Stanley Clarke. For it was he who first played in such a way that the bass and all its different sounds became indispensible within the rhythm section. Jazz men Dave Holland and Steve Swallow laid down their upright basses and picked up electrics (although Dave soon returned to the acoustic). Alphonso Johnson came along with his sonic funk playing, and along with Jaco Pastorius, he introduced even more new voices on the instrument. Chris Squire's one-of-a-kind playing and all the myriad of sounds he produced influenced a generation of young rockers. His impact is still being felt today.

Now, with the advent of modern amplification systems and effects boxes, and an almost monthly introduction of modified, high-tech bass guitars, players virtually have supermarkets of sound in which to buy equipment and develop their touch. Jazz, funk, soul, rock, and musical forms using the instruments of Africa, South America, and Asia offer different kinds of influences for up-and-coming players, and they provide many avenues for them to choose what kind of music they want to play. The electric bass is in full swing in the musical community so get out there and find some buddies who think about music the way you do, and start to play. Nothing helps your playing like experience.

Jeff Berlin

CHOOSING A BASS GUITAR

Over the past decade, I've been asked many times about buying an electric bass, and I've always felt that it was important to consider a few of the player's specifications, as well as his finances. Also whether the bass is his first of a step up from what was previously owned will play an important part in the selection process.

When electric basses first appeared about 30 years ago, they were not met with great enthusiasm, and for a long time there were only a few primary manufacturers. Recently, though, the instrument has become so popular that there are now several dozen makers with various models to choose from; this makes the final decision even harder.

There are three points I feel are important in the choice of a bass. The first is to buy a name brand. This will be helpful should you "outgrow" the bass and want to trade it or sell it later. The second point is to buy a solidbody if at all possible. Hollow bodies have almost become extinct (mostly because they were more prone to feedback and strange tones), But there are still some around. The third point is to buy the best bass you can afford. It's usually a good idea to buy a better bass and a cheaper amp if you're just starting out. The amp will be used mostly for practice in the beginning, so you probably won't need a very big and powerful amp. Later on, you can save for a better one for gigs, and use the old one for practice. Purchasing a used amp can help make the better bass more affordable.

Naturally, different people have different needs. For instance, a ten-year old beginner should probably get a short-scale bass such as a Fender Mustang of Musicmaster. Later on, the bass could be modified (hotter pick-ups, more massive bridge, etc.). A player who is over five feet tall should be able to play a long-scale instrument quite comfortably. There are many good brands to choose from. For the most part, these cost anywhere from $350 to $1,000.

In the last several years, there have been great improvements in electric basses, and extra electronics have been built into many instruments. The more expensive basses often feature such circuitry, and because these instruments are not always mass produced, they may not be available in every music store. The ones in this category that have impressed me are made by Steinberger, Alembic, and Ken Smith. Some of these can cost as much as $6,000—not within the means of every bassist. Whether a bass is expensive or not, though, always check to see if you need all the features present on it.

When buying a bass, try to check the neck adjustment to see if there is a warp in the fingerboard. In some cases, this can be done simply by looking down the neck from the nut to the bridge. Fret buzz in localized sections of the neck can also point to warpage. Small warps can usually be corrected by adjusting the truss rod. If you don't know too much about basses, look the salesman in the eye and ask, "How's the neck adjustment? Can you check it for me?" Most likely, you'll receive an honest answer, and if there is any problem. he will correct it.

Very often, the strings on a new or used bass are not the best, especially if the instrument is out on the sales floor where it is played regularly. If the strings seem dead or lifeless, you may ask the salesman to throw in a new set of good strings. I stay away from round-wound strings as they tend to wear grooves in the frets faster than flat-wounds, in turn causing buzzes. (Some bassists prefer round-wound for their brighter sound; if you choose them, beware of potential perils.)

Many stores will try to sell a hard-shell case. I feel that you may be better off with a soft, padded gig bag. First of all, a gig bag is lighter; second, it offers good protection; third it is much easier to handle. I even take my bass on a plane, with it hanging in a garment bag, which I place in the carry-on luggage closet. If you plan to buy other accessories, the time when you purchase your bass is a good one because you may be able to get a package deal (bass, amp, case, cord, etc.).

If you decide to buy from a pawnshop or a private party, you are taking a risk, since there are no guarantees. In such situations, be sure to try out the instrument for a few minutes. Look for worn frets, a warped neck, and electronic problems. If you lack experience, take an experienced bassist with you so that you won't get a bad deal. Don't be afraid to bargain for a lower price, either. Good luck.

Herb Mickman

BUYING AN ELECTRIC BASS

When someone wants to buy a bass, even before going to a music store he or she should first decide what they want it for: learning how to play, doing studio work, or performing.

If a person is just starting to learn bass, he or she should get one that is easy to play—a simple. straight-ahead instrument with a volume control—nothing too far out. Also, the instrument should be aesthetically pleasing; it should look good enough so that when you see it, you *want* to play it. We all get into slumps, and for beginners they are often fatal, since after only a few months or so of practice, if things aren't going right, they may just quit. But by having a bass that looks and feels good, it might encourage the beginner to continue.

As far as a studio musician is concerned, I believe the person should either buy a custom-made instrument, or else purchase a number of different basses (when you can afford it). They all have their own sound and would have different applications, depending on a particular gig. (It's true, though, that plenty of musicians have successful careers with just one or two good quality, versatile, factory basses.)

For performing, the smart bassist usually buys an instrument that is built very strong and is versatile. I myself often sacrifice a little musical complexity and speed so that I can work the controls and make use of the different sound possibilities an instrument's electronics can provide. I do prefer simple basses, but I also like those that have an extra knob or an out-of-phase switch on it—it makes things more interesting.

On top of all that, I look for a very light instrument. I think most basses made today are too heavy. When you look at the way people like Alfonso Johnson, Jaco Pastorius, Chris Squire, and others are playing today, they need a bass that not only looks good but—since they are moving around onstage more and not just sitting next to an amp plunking away—also one that is light and easy to move with.

The price that a beginner can expect to pay for a good new bass is between $500 and $1,000. Most of these are mass-produced, and are made out of just plain wood—whichever tree seems to be around at the time, they cut and use. But on a custom-made instrument, they often use curly maple or exotic woods, which are good. Many decent basses also feature necks or parts made of aluminum and synthetics, but I prefer wood for the neck and body.

As far as buying a used bass is concerned, I feel that some companies are not producing basses that sound as good as the ones they made 10 or 15 years ago. The quality of the wood in the older models is often better, the necks seem better made, and just the way the instrument was put together is better in the older basses than in the newer ones. I think so, anyway. New basses have a tendency to feel very much like they were made in a hardware store; the older instruments were made with more love, if you know what I mean. Although they were produced in a factory, I think they have the feel of hand-crafted guitars.

It is true that many manufacturers are making *better* instruments today than they did in the past, but there's just a certain feeling when you pick up

an old bass—somehow you feel that the person who made it did so out of love for the instrument, and he or she wanted the player to love it also, not just make money with it.

Once you get into a store, don't pay too much attention to the salespeople. Often they mean well, but usually they don't know what's happening. Just say, "Thanks for the help; now please show me where your basses are." Also, take someone along with you who knows about basses—they might be able to spot many things that you, as a beginner, would know nothing about.

For instance, don't be afraid to buy an instrument simply because it looks cracked, because it may only be a finished crack (a flaw that can help you bargain for a lower price), not a crack on the wood itself. Knock on the wood to hear if it's solid. Sometimes the wood can crack on the inside and appear OK on the outside, because the finish many companies put on their instruments today either cover up the crack, or seal it, or both. If the bass is cracked you'll probably hear a distorted sound, kind of thin and flat. But often this is a subtle thing that only someone who's experienced with instruments can detect.

Some things you can do before buying a bass are to plug the instrument into an amp and check for hum. Many instruments, both cheap and not so cheap, have an incredible hum. So turn the instrument's volume to maximum, with the amp set midway or higher, and listen, If it hums, avoid it; or if you really like the instrument, have a repair-person check it out and tell you how much it will cost to get rid of the noise. Have them fix it *before* you buy. Also, make sure the tuners work properly—they should turn smoothly and evenly. And you should also check for intonation problems, but this, again, is best left to someone who knows abut the finer points of the instrument.

So you should strive to purchase the best possible bass for the money you can afford to spend. And shop around a lot; don't buy the first thing you see. It might eventually be the one you *do* buy, but give yourself a chance to explore different instruments before making the final decision.

Stanley Clarke

NEW DIRECTIONS IN ELECTRIC BASS DESIGN

Hard work, dedication, and ingenuity brought the electric guitar into being as a viable musical instrument. After the creation of the electric guitar came the electric bass. And since its introduction in the early '50s, developments for its 6-string brother have almost always come first.

Effects, exotic amps, and a wide selection of instruments have practically always been in the domain of guitar players; whatever developments came along for bassists were usually pre-tested on guitarists.

Over the past decade, quite an upheaval in bass technologies has occurred. Sleek, flashy, multi-laminated bass guitars with ornate hardware, wide-range pickups, and versatile electronics have come into prominence. Amps designed especially for bassists—not just guitar amps redesigned for low-frequency response—are widely available. Effects, too, have undergone quite a transformation. Audio engineers creating effects devices have classically sought more high-frequency fidelity. Now, with wide-spectrum integrated circuits and enhanced low-frequency fidelity, most effects work just as well with bass as with guitar. In fact, some work *better*.

In the past few years, a great deal of attention has been devoted to the actual design of the bass. New materials. elecronics, and shapes have all come into play, and by examining the basses in the following article, you should become familiar with some of the instruments redefining the role of the bottom end in music. (Please note: the prices quoted are circa 1982, and may have increased proportionately.)

Steinberger Sound. Winning a Consumer Market Award from the Reinforced Plastics/Composites Institute or an Industrial Design Excellence Award from the Industrial Designers Society of America may not necessarily sound like important kudos to the average bassist. However, the award recipient in this case is Steinberger Sound, whose headless reinforced *plastic* bass with a futuristic flair has not only been acclaimed by other designers and plastics manufacturers, but by some of the top names in the 4-string realm: Sting, Bill Wyman, Andy West, John Entwistle, Tony Levin, Jamaaladeen Tacuma, and Tim Bogert (to name a few). The Steinberger is strikingly different from most conventional basses. For instance, the tuning machines—knurled knobs—are located on the body. And the body itself is small and lightweight (the entire instrument weighs about 9 lbs.).

Oddly enough, the bass' designer, Ned Steinberger, is neither a luthier nor a high-powered bassist with penchant toward tinkering. He is a bona fide industrial designer, who formerly created furniture (mostly chairs) for schools, offices, and hospitals, and was asked to apply his human-engineering know-how to some of Spector's basses. Ned designed their NS models, and as a result, he became interested in alternative designs for the 4-string.

Steinberger felt that traditional basses were poorly balanced: "The guitar, though, functions on a fairly high level," he says. "That is, the body and neck portions work—they balance, they afford good access to all the frets, and so on. It is much more difficult to design a comfortable bass. It tends to be neck-heavy, and as far as I'm concerned, there's no good reason for the tuners to be up there. And I knew that a lot of the neck-heaviness could be alleviated by eliminating the headstock and relocating the tuners."

Steinberger's first prototype was wood, but he found that a wooden bass' sound actually suffered when a neck was connected to an ordinary small body. He experimented, and found that by covering the entire instrument in fiberglass, there was a great improvement in the tone and sustain. Eventually, the design evolved toward the elimination of wood altogether. "I believe there's a limit to what kind of sound you can get from wood," Steinberger says. "What you're looking for in a solidbody instru-

ment is extreme rigidity. Plastics on their own used in an instrument won't give you the necessary results. Plexiglas, for instance, has a great deal of elasticity, and if you make a bass of it, you lose highs and sustain. Our bass uses graphite and fiberglass as the structure. The plastic is merely the bonding agent that holds it all together. As far as I'm concerned, though, there is no *better* or *worse* sound, because it's a subjective thing. So, instead of trying to impress a certain sound on people, I'm just trying to let out the full potential that the bass has to offer."

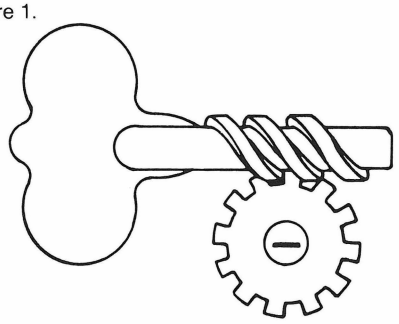
Steinberger's original ideal was to sell his design to an established guitar manufacturer, and let them produce it. According to Ned, though, companies were skeptical as to whether a plastic bass would be accepted in the marketplace. "They seemed to be afraid of the idea of plastic," he states. "And as far as the guitar industry was concerned, plastic was something to be used in order to lower the price of an instrument. What they didn't realize was that graphite and epoxy are more expensive than even exotic hardwoods."

Turned away by the major companies, Steinberger decided to produce the bass himself, and four years after its inception, his company makes not only a 4-string bass, but a 5-string as well. On the drawing board is a design for a guitar, which should be available next year.

The most prominent design feature of the Steinberger Bass is its headless one-piece neck/body of plastic (molded epoxy resin reinforced with graphite fibers and glass fibers). Its overall length is only 38"—its scale length is 34". The 24-fret fingerboard is also synthetic—fiber reinforced phenolic. A boomerang-shaped strap support plate on the back pivots on an axis located at the instrument's exact center of gravity. The strap attaches to both ends of this piece, and allows the player to adjust the bass' angle to suit his needs. An arc-shaped leg rest snaps onto the bass for seated playing.

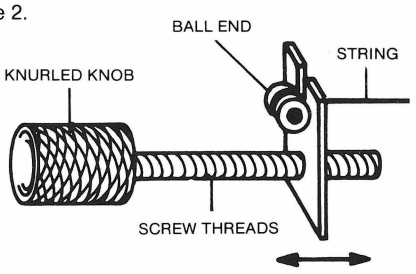
The fingerboard has a zero fret, and the string's ball ends fit in slots at the end of the neck (where a headstock would normally be located on other basses). The bridge, which is machined from brass and stainless steel, has four individually height- and intonation-adjustable saddles, plus four specially designed tuners. Conventional gear-type tuners that the string wrap around a rotating center post (see Fig. 1).

Figure 1.



The Steinberger tuner has a metal piece onto which the string is attached. Special Superwound strings with balls at both ends are simply slipped into a slot in the piece; conventional strings can also be used, but must be locked in place with Allen screws. The four knurled knobs at the end of the body are attached to a long, threaded rod (much like a screw), which passes through each saddle in the following manner (see Fig. 2). When the knurled knob is turned, the threaded rod twists through the bridgepiece, and either pulls the string (raising the pitch) or relaxes it (lowering the pitch), depending upon which way it is turned. To prevent accidental detuning, the tuners are recessed into the end of the body.

Figure 2.



Four 4-string models are available. The H-1 has one high-impedance pickup, one volume, and one tone control; the L-1 is similar, except the pickup is low-impedance. (The H-1 and L-1 are now special-order instruments.) The H-2 and L-2 have two pickups each, and one tone and two volume controls. The L-2/5 has five strings, which can be tuned *E, A, D, G, C* (low to high), or *B, E, A, D, G*. It has two low-impedance active pickups, plus one tone and two volume controls. Prices range from $1,600.00 to $2,100.00. Fretless models with or without marker lines are offered at no extra charge.

Modulus Graphite. Five years ago, Geoff Gould was designing satellite antenna structures for NASA, and one of the important criteria for a workable unit was a lightweight, yet incredibly durable structure. He found that graphite provided the necessary rigidity and resistance to extreme temperatures and stress. Gould, who is a bassist as well as a chemist, started designing solid graphite necks for guitars and basses, and in 1977 began making them for Alembic under the name of Modulus.

Since leaving the aerospace industry in 1978, Geoff has come to build

necks for Moonstone, Zon, and most recently Music Man (the latter two are also covered in this feature), in addition to his own company's guitars and basses. Among the current users of Modulus' necks are guitarists Amos Garrett and Henry Kaiser and bassists Bunny Brunel, Tom Petersson, Stanley Clarke, and John McVie (Clarke and McVie have Alembic basses with Modulus necks).

Modulus necks are molded as a single piece of graphite, using a process of extreme heat and tremendous pressure. Fibers of graphite, which are treated with a special epoxy, as well as graphite cloth impregnated with epoxy, are bonded into a single unit (a quilted pattern on the necks corresponds to the pattern of the material).

Gould says that graphite (a form of carbon—the same material from which diamonds are made) bonds into long molecules and is tremendously stiff, yet surprisingly not very dense. Its terrific stiffness makes it possible to construct an 18-string bass with no truss rod, such as the one Gould made for Tom Petersson two years ago.

When properly set, the strength of graphite/epoxy is comparable to that of steel, yet its stiffness-to-weight ratio is much *higher* than that of steel and most other materials. The necks Modulus makes are actually "U"-shaped channels, a design feature that decreases their weight substantially.

Perhaps one of the most unusual developments by Modulus is an extra-long-scale (35") 6-string bass called the Quantum 6. Unlike the 6-string basses of the '60s, which generally had scale lengths of less than 31" and which were primarily aimed at guitarists (Fender's Bass VI even had a vibrato), the Quantum 6 is designed especially for bassists. Gould's aim is to extend the range in both directions: with a low *B* or *A* and a high *C*.

The extra inch of scale length, is, according to the designer, necessary to facilitate proper tonal and harmonic balance of the low string, which is a special-gauge GHS .129 round-wound (by comparison, most low *E* strings measure between .090 and .115). By increasing the "speaking" length of the strings, as well as their tension, Geoff says that the tone and sustain of all six strings is enhanced. In order to utilize the neck-through-body design to its full extent of producing greater sustain, Gould cut slots into the neck behind the bridge to accommodate the ball ends of the strings. By terminating them in this manner (as opposed to using a tailpiece of by passing them through the body), he feels that the best direct coupling of the neck and strings is provided.

In order to keep the weight down (the Quantum 6 weighs 8½ lbs.), a pair of hollowcore bookmatched maple body halves were used. Special-design Gotoh tuning machines have black finshes to accent the graphite neck and headstock. Bridge saddles and the nut were fashioned from graphite/epoxy, although the Quantum, which is also available in 4- and 5-string versions, can be fitted with standard metal saddles and/or a metal tailpiece. Prices for Quantum basses range from $1,895.00 to $2,995.00, depending on the format and options chosen.

Leitch. The Leitch Double Neck Bass, built by Franz Leitch Damler and Bill Giebetz, has a 6-string bass with a 34"-scale. The second neck of this custom instrument, made for bassist Keith Judd at Leitch Guitars [10004 Mathew N.E., Albuquerque, NM 87112], is a 5-string 42"-scale fretless behemoth. It was designed by Judd, Damler (the shop's founder), and current shop owner Giebitz, and built by the latter two.

The offset design is stunningly accented by the deep grain pattern of the zebrawood body, with ebony binding and an ornate inlay of the winged mythological horse, Pegasus (made of mother-of-pearl, mountain mahogany, and brass). Both necks are maple, and they pass through the entire length of the body; they have adjustable double truss rods, as well as ebony fingerboards and brass inlays.

The 5-string fretless is essentially an electronic version of a string bass, and because of its extra-long scale length, upright bass strings were required. The fretless is tuned *B, E, A, D, G* (low to high), while the 6-string

is tuned *E, A, D, G, C, F.* Gold-plated Schaller tuning machines and custom-machined adjustable brass bridges, nuts, and truss rod covers are also included. An on-board stereo preamp with separate volume controls and 3-position tone switches for each channel, plus pickup and neck selector switches, make up the electronics that enhance two custom-made Bartolini hum-canceling pickups (for the 6-string) and two Carvin M22B humbuckers (for the 5-string).

Giebetz, who took over the shop when Damler retired in 1981, runs Leitch Guitars with his wife Jennie, Scott Buchanan, and an apprentice, Monty Daniels. The bulk of their work consists of repairs, while their building endeavors consist of steel-strings and classicals, as well as custom electrics and, of course, basses. Bill says that prices range from $500.00 for a no-frills electric guitar to $4,000.00 for something as exotic as Judd's bass.

Chiquita 6-String Bass. Hondo's Chiquita travel guitars are well-known for their curvy little bodies and short 19"-scale length necks. For bassists who want a small bass to "knock around" on, or for guitarists who want to double on bass without getting lost on a long scale, the Chiquita CH-4 Travel Bass is designed to fill the need for portability; an added bonus is an extra two strings.

To make the CH-4 easy to stow or carry while in transit, it's designed around a 24¾" scale length (most basses fall in the 31" to 34" range). The body is 40% bigger than that of the Chiquita guitars, and the electronics are very straighforward: a single humbucking pickup and a volume control. Rosewood is the fingerbaord material, and the nut is made of plastic. Depending on the type of finish—metallic red, metallic blue, black, or white—the CH-4 is made of mahogany, maple, or other hard-woods (the CH-4ML is a natural-finish multi-laminate of maple, ash, and mahogany).

Strings are gauged .080, .070, .056, .044, .036, .030, low to high, and each one passes over its own adjustable brass saddle before terminating through the body. Standard *E, A, D, G, B, E* or any other tuning can be used on the CH-4. Hardshell and soft cases are available for the bass (prices are $79.95 and $29.95, respectively). The Travel Bass has a list price of $279.95 ($289.95 for the laminated natural model). And for those who want the most in versatility from their instrument, there's yet another feature: Simply change the nut and strings, adjust the intonation, and the CH-4 converts to a guitar.

Veillette-Citron Baritone. Standing on the middle ground between 6-string basses and guitars is the Veillette-Citron Baritone, an electric hybrid that's tuned a fourth lower than a standard guitar: *A, D, G, C, E, A* (low to high). The lowest string's tuning corresponds to that of the open *A* string of a bass. Originally developed about a year-and-a-half ago for John Sebastian, who found the scale lengths of 30" or more on exising 6-string basses too long for his guitar-acclimated reach, the Baritone (a member of Veilette- Citron's S Series) is intended primarily to extend the guitarist range.

Joe Veillette and Harvey Citron designed and built a 28¾"-scale instrument, with 22 jumbo frets in its fingerboard (production models are offered with rosewood, maple, or ebony, depending on the customer's preference). The lower four strings are round-wounds, while the top two are plain or unwrapped; they are gauged: .080, .057, .044, .031, .025, .016 (low to high).

The Baritone's one-piece neck and two-piece body of flamed maple are finished in nitrocellulose lacquer, available in clear, sunburst, or colors. A loop-style truss rod is enclosed in the neck; adjustment is undertaken at the end of the neck nearest the rhythm pickup.

A pair of custom-design single-coil pickups, a pickup selector switch, a master volume, and a master tone control comprise the electronics of the Baritone. The nut is brass, and a specially-machined brass bridge is chrome-plated, except on models with gold-plated tuners, when it is

given a protective clear coating. Both tremolo and nontremolo styles are available.

Among those using the Veilette-Citron Baritone, which has a base price of $995.00, are Jeff Baxter, James Taylor, Eddie Van Halen, Chris Stein of Blondie, and Earl Slick.

Music Man String Ray. The Sting Ray, Music Man's mainstay bass for the past several years, was recently outfitted with a graphite neck made by Modulus Graphite. Its distinctive "3-plus-1" tuning machine arrangement on the headstock stands out even more strikingly against the black graphite than it does against wood. The 34"-scale 4-bolt neck, which has a phenolic fingerboard with 21 jumbo frets, replaces the wood 3-bolt model formerly used; the neck tilt adjustment has also been removed.

The body is made of ash (for natural finishes) or popular (for painted finishes). A choice of sunburst, black, and white lacquer finishes is offered. All the hardware, including the Music Man tuners made by Schaller and the Music Man bridge, is chrome-plated. Each string has its own individually adjustable mute at the bridge, which allows for selective dampening of notes. A single anti-hum pickup with active electronics and controls for volume, treble, and bass are standard equipment. There is also a bright switch. Music Man's graphite-neck Sting Ray has a list price of $1,095.00.

Zon Legacy. Another bass using graphite as its neck material, Zon Guitar's Legacy, has neither a bolt-on neck nor a through-body design. Instead, the 34"-scale neck (custom-made by Modulus Graphite to Zon's specifications) is inset into its double-cutaway offset body, epoxied, and hand-smoothed to provide a seamless joint. By using a body consisting of one piece of maple sandwiched by two pieces of mahogany in conjunction with the graphite neck, the Legacy weighs only 7lbs. A high-gloss epoxy finish—offered in white of black—covers it.

Schaller tuners and a Schaller bridge with individually adjustable saddles is employed on the Legacy. An 8-string version, with individually adjustable saddles plus eight tuning machines on the headstock, is also available. A single Bartonlini pickup and a quasi-parametric filter make up the electronics complement. The volume control acts in a standard fashion, while the tone control varies the boost and the bandwidth of the bass' signal. A 3-position switch selects the center frequency of the filter circuit (bass, midrange, or treble). The 4-string model sells for $1,390.00, the 8-string for $1,590.00.

Kramer Bass Tremolo. The Kramer Bass Tremolo is a retrofit bridge/tailpiece that affords bassists the notebending flexibility long afforded to guitarists. It allows for both raising and lowering the tension and the corresponding pitch of the strings on most 4-string basses. It is made entirely of brass—with either a chrome-plated or lacquered finish—except the tremolo arm, which is 1/4" stainless steel. (Kramer also offers the Bass Tremolo with a special black finish as a standard on its Carrera basses.)

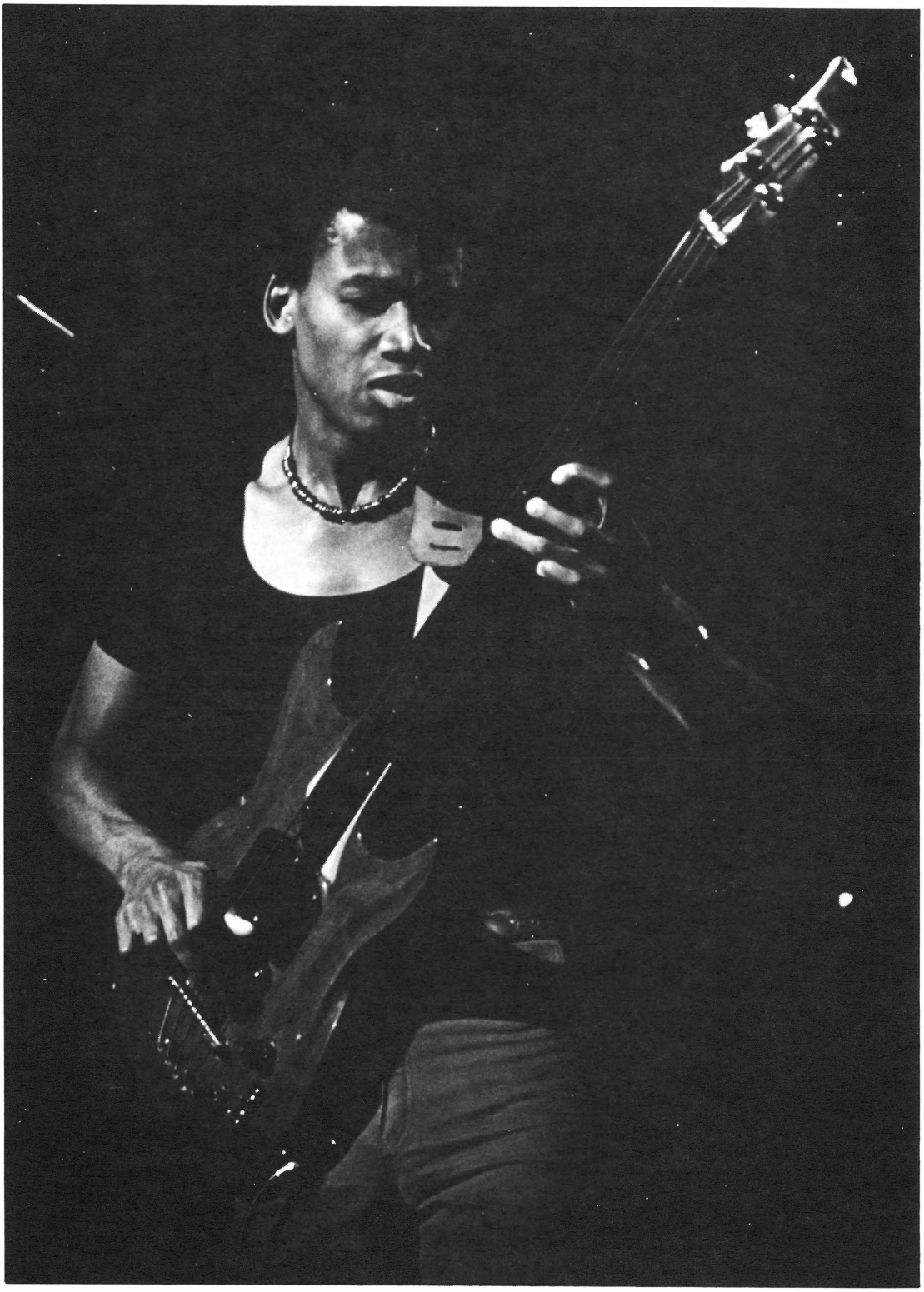
The Bass Tremolo consists essentially of two plates; one is anchored to the body of the bass with two screws. The other is connected to the lower one via adjusting screws (this one holds the saddles). There are bolts on the bottom, and two heavy-duty coil springs. Two 5/8" holes must be drilled into the body in order to provide access for the two springs and their corresponding tension-adjustment bolts, which move when the arm is depressed. Because of the drilling required, Kramer's technicians suggest having the Bass Tremolo installed by a professional repairman.

Tension of the springs can be adjusted by tightening or loosening the locking bolts that connect to the springs. The stainless steel arm screws into the assembly, and a rubber washer ensures that it won't fall away from its intended playing position. Overall height of the bar can be adjusted with a nut.

An integral machined tailpiece holds the ends of the strings, and the intonation and height of each string can be varied by adjusting the bridge saddles. Two Allen screws in each saddle adjust the height; slots in the bridge correspond to the two Allen screws and restrict side-to-side movement of the saddles. A Phillips-style screw holds each one in place. To adjust the intonation, simply loosen the Phillips screw, move the saddle to the desired place, and retighten. Kramer sells the Bass Tremolo for $159.00.

The range and versatility of the bass guitar is rapidly expanding, and this article showcases but a few of the new developments. No longer are bass players just being given "hand-me-downs" from the guitar realm. Now they're getting the hot, new technology. And it sounds so good.

Tom Mulhern



2. STUDYING THE BASS

A BRIEF INTRODUCTION TO THE BASS

The bass guitar's four strings are tuned, from the fourth to the first (thickest to thinnest) strings, E, A, D and G. To tune the bass with a guitarist, it is easiest to start by tuning your G string to the sound of a guitarist playing a G (third fret) on the sixth string (low E).

Music notation for the bass is always written an octave higher than the actual sound. This system was initiated to simplify the reading of bass notes.

Probably the best way to start playing is working through scales. Playing scales not only gives added strength to your fingers, but also gives you a good idea as to what notes are available to play in what keys.

One thing you should concentrate on in beginning the bass, is your right hand (for right-handers) technique. Far too many beginning bassists have a tendency to pick the strings with their thumb. If you plan to use your fingers, you should start now by alternating your index and middle fingers (right hand) whether playing scales or compositions. Using the first two fingers of your right hand now will eliminate the problem of changing from thumb to this technique later on. Alternating these two fingers will give you more efficiency and greater speed.

If you plan to use a pick on the bass, you should start now by alternating your picking strokes, up-down, as opposed to a one-direction picking stroke. Later on, you will have the option of using the all-down strokes or all up-strokes, but in the long run, it is easier to first learn an up-down alternating stroke before you get hooked on the "all-down" stroke habit.

The *A* major scale includes the notes: *A, B, C*♯*, D, E, F*♯*, G*♯ and *A* again. Looking at Fig. 1, you will note a definite pattern to this scale.

The fingering pattern for major scales is within a four-fret range. To play a major scale in any key, simply find the note (tonic) with the same name as the key selected on the low E (fourth) string of the bass and start from there, using the following four-fret range pattern: 2, 4; move up to the A string, 1, 2, 4,; move up to the *D* string, 1, 3, and 4. See Fig. 2.

You can see this pattern in the *A* major scale, as seen in Fig. 1; or, for example, if you wanted to play a *D* major scale, you would first find *D* on the low *E* string of the bass. Since *D* on the fourth string occurs at the tenth fret, you would first depress that position. Then you would move up two frets (12th fret) for the second note of that scale. You would then move up to the *A* string and depress the third string at the ninth fret, then the tenth fret, the 12th, etc. The essential point being to follow the pattern as given in Fig. 2.

The following is a shuffle bass pattern which works for many differnt types of blues. If you have a guitarist handy, have him play the guitar part, while you run through the bass part, so that you can get an idea as to what the feel of bass playing is.

The following rhythm arrangement is written in tabulature and standard "bass clef" notation for the bass. In the tabulature system, the four lines represent the strings of the bass, the bottom line is the low *E* string and the top line represents the *G* string. The numbers placed on the lines represent the frets at which you should depress the strings with your left-hand (for right-handers). Enjoy yourself!

Michael Brooks

Figure 1.

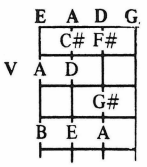
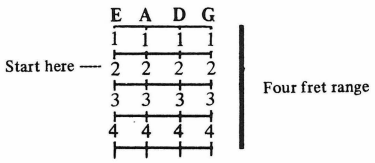
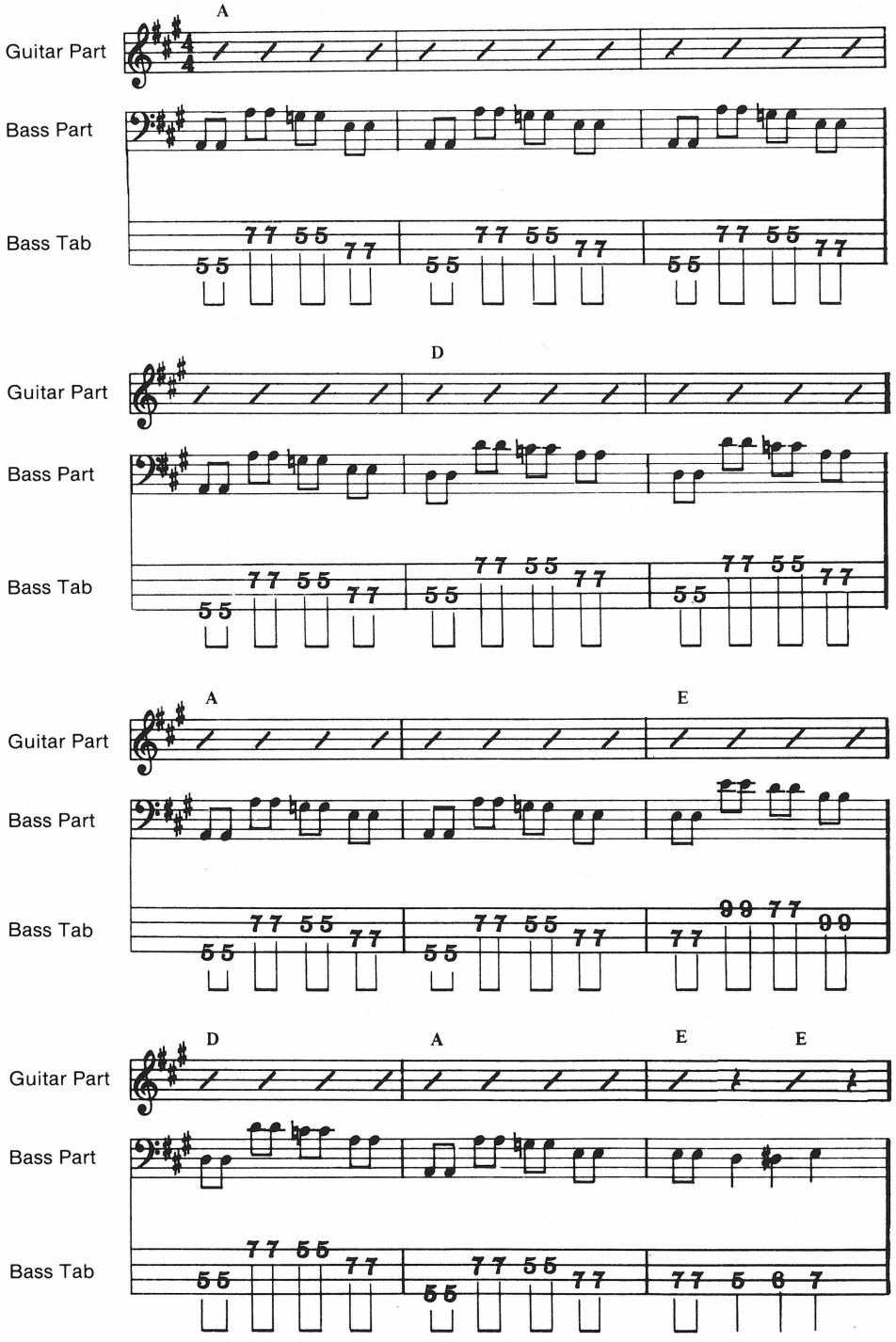


Figure 2.



"Bouncin' Blues Shuffle in A"



PRODUCTIVE BASS LESSONS

Do you remember the first time you picked up an electric bass and tried to play a few notes? Chances are you were able to get a decent sound on it within a few minutes. This is why perhaps ninety percent of all electric bass players teach themselves, and it's part of the reason that the bass is so popular. By comparison, other instruments such as the trumpet, violin, and oboe are much more difficult to learn, and it usually takes years of study to get a good tone.

The advantages to teaching yourself include avoiding the expense of lessons, and you gain a feeling of accomplishment. The disadvantages are that many self-taught players get into bad *physical* habits and often never develop the reading ability that is usually achieved through lessons. Teaching yourself to play is often the hard way, since it is sometimes very difficult to find out a lot of information on your own, and you may have to experiment for years to find what works best.

Recently, a knowledgeable bassist/teacher and I were discussing some of the aspects of teaching the electric bass. We both recalled our own beginnings as teenagers: We wanted to be able to do it all after two lessons. Today's young players aren't too much different, except that certain standards for an electric bassist are higher in the last ten years. More is expected of a bass player in rock, fusion, and jazz idioms. Now bass players can *really* solo.

I recalled an impatient gentleman who had called me for some lessons. What he really wanted was to be shown some licks he could play right away. He was unaware of his problems: a very crude playing technique, a limited knowledge of the fingerboard, an undeveloped ear, and an unsettled sense of time. He had been playing for only a year, but he thought he was a genius because he could get through a few licks with an aggressive flair. In the hour we spent, he gave me the hardest time I have ever had with a new student. He wouldn't let me teach him, guide him to an easier way to do things. He didn't want to take my advice about improving his technique or learn how to read music, nor would he try any ear-developing concepts. He approached the bass like an athlete watching someone else play. He produced notes, but had no idea what they were and which chords they related to. Very often I see students approaching the bass without any idea of how much practice times it takes to become a skillful accompanist and improviser. They are not realistic.

I've outlined some ideas that I feel will help you get through the most out of bass lessons if you really want help. First, try to find a professional bassist who reads bass clef. You will learn the most from an organized player who has a method—starting with reading music and learning the fingerboard from bottom to top. Avoid the guitarist who also plays bass as a sideline and shows you only licks.

The next points are extremely important: Make an appointment and be there on time. This sounds easy, but a lot of people have problems keeping an appointment, and it is very frustrating to a professional player to be stood up. If you can't be there, simply call and cancel the lesson.

Next, be open to advice and follow it. The teacher obviously has more insight into the problems of playing the bass. Make sure you understand what concepts are being discussed, and follow them. Progress will come only from you putting in practice time on the instrument. You will have to set time aside each day to work on specific skills. Be sure you're in a well-lighted and quiet area so that you can concentrate. Try to spend a minimum of one hour a day. Some of my students have put in three, four, and five hour s a day and have made incredible progress. Take a break each hour to give your brain and hands a rest.

To practice correctly, you will need a metronome, which will help steady your sense of time, and it's a great tool for checking your progress. Get an AC- or battery-operated one if possible.

The best way to get your money's worth out of the lesson is to come prepared. If you've really put in practice time, then you will make pro-

gress. Otherwise it is a waste of the teacher's time and your money. It's better to call and change the lesson time than to come in and be told to do everything over again. If the teacher gives out materials to be memorized, keep checking to be sure that you haven't made a mistake and practiced wrong all week.

You should be aware that the good player is not always a good teacher. Teaching takes some insight into problems, a sense of organization, a desire to help, and patience. Very often the teacher cannot get excited about your playing if you haven't put in practice time on your bass. After all, teachers have egos, too. They want to see some results for their efforts.

Where should you look for an organized teacher? Call the Musician's Union, for instance, and ask to speak to a business agent. Alternatively, look in the Yellow Pages of the phone book under "Musical Instruments—Instruction." Also ask friends and other bass players, or call the office of a symphony orchestra in your area, and try to get the contractor's name; ask him or her if any of the bassists teach. Remember you'll only get out of the bass what you put into it.

Herb Mickman

MUSIC COLLEGE & BASS PROFICIENCY

An overwhelming majority of the people who own electric basses never really study the instrument seriously with a teacher. Yet, most bassists want to improve, and a large number buy method books and try to teach themselves. A typical high school student who has been playing bass may want to go to a music college. The first obstacle he or she confronts is that most colleges do not allow you to declare a major in *electric* bass. They often don't have an electric bass teacher, and because the instrument is so new (compared to the standard orchestral instruments), they haven't devised a curriculum. By this I mean that they don't have a program of various pieces that should be played at the many stages in your development.

There are some alternatives for getting into the school, even if you don't major in electric bass. One is to become a theory or composition major. Another is to take to take up the string bass, which has many things in common with the electric. However, the string bass world is quite different in terms of the types of music you would be expected to master on the college level. Funk, soul, and popping styles, for instance, are far removed from the typical college curriculum.

In the last few years, there have been a few opened-minded schools that have opened their doors to the electric bassists. They have classes which may include from 10 to 40 bassists in a single room. A lot of information is given out, but there is very little, if any, individual instruction. You're expected to motivate yourself to practice and you must remember all the details given out by the teacher.

Having taught in this class situation for four years, I feel qualified to say that very few players really can motivate themselves in a classroom situation. In my experience, I have found that the really talented and determined players will put in the time and effort to improve. The rest won't be able to motivate themselves as well.

However, in a private lesson situation the motivation is much stronger for all levels of bass players. You are paying for individualized attention, and for a period of an hour or so, you are getting help on a one-to-one basis. Problems relating to fingering, reading, theory, and technique are covered where they relate to you—on your particular level.

I strongly recommend that you try to take private lessons on a weekly basis to get the full benefits of a musical education. These should be with an organized pro (some colleges offer individual instruction, even if they don't allow you to major in electric bass). Be aware that you may not be able to get all the types of information and guidance from one teacher. Some instructors are only well-versed in the teaching of sight-reading, while others may cover primarily chord practice and ear training.

I would definitely avoid any teacher who does not read bass clef. Sight-reading is a skill that not only benefits your understanding of bass music, but it will also be important in many other areas of earning a living as a musician. As you go through various books, you will greatly expand your knowledge of the fingerboard and improve your ear for recognizing the intervals between notes. This in turn will tend to make you a better improviser.

Many colleges offer something quite unique in the area of performance: the stage band. Such a band usually has from 14 to 20 people reading big band charts, and the bass parts present many challenges. There are notes written exactly as they are to be played, and there are also notes that must be interpreted—especially in jazz charts. Also, you will encounter chord symbols that will demand a lot of fast thinking in order for you to make up a good bass line on the spot. This is invaluable training for studio work.

Try to take as many theory and harmony classes as possible. It's not a bad idea to put off any composition, arranging, orchestration, and counterpoint classes until you have taken all the theory and harmony classes a school has to offer. By the time you have completed these requisites, you'll be much better prepared to handle such advanced topics. Good luck, and remember that no matter how appealing a school's bass program is, it is *you* that will have to motivate yourself to practice. I've been there; I know.

Herb Mickman

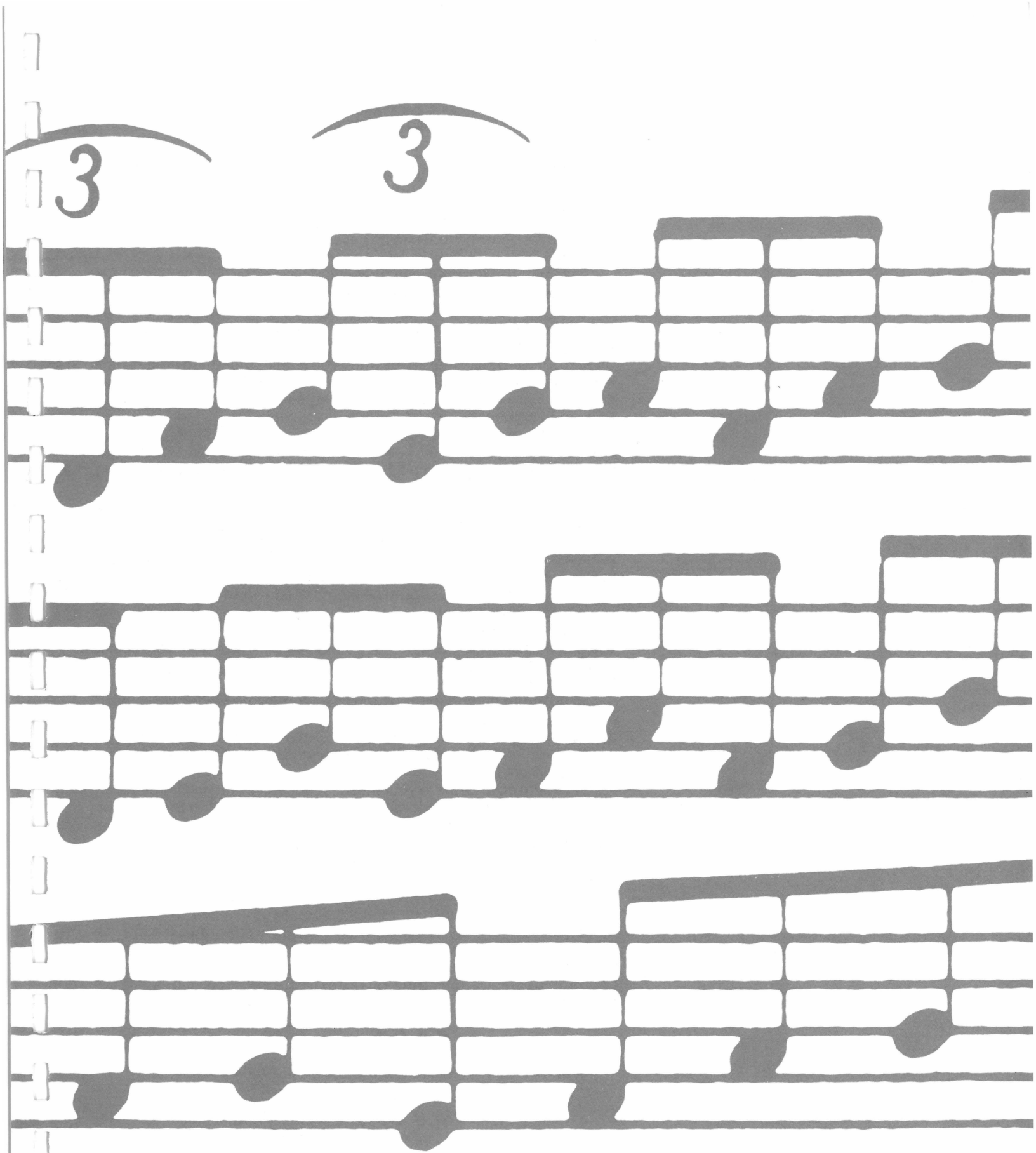
SOME BOOKS FOR STUDY

The following list of books for study includes methods and studies with material ranging from simple eighth-note rhythms to rock figures, syncopations, and some advanced exercises. Some will have to be ordered from the publisher if you can't find them in a music shop; many larger stores will be able to order them for you, so don't be afraid to ask. It would be a good idea to go through the first four books on the list before attempting the others.

Books 1, 2, 5, and 16 are general methods, while 3 and 4 are straight eighth-note and sixteenth-note studies. Rock figures with a lot of syncopation are included in 5, 6, 12, 15, and 16. Books 7, 8, 10, 11, 13, 14, and 17 are good for jazz reading.

1. *New Method For The Double Bass*, by F. Simandl [Carl Fischer, 62 Cooper Square, New York, NY 10003].
2. *Bob Haggart Bass Method* [Big Three Music, 729 Seventh Ave., New York, NY 10019; and Robbins Music, 1350 Avenue Of The Americas, New York, NY 10019].
3. *First Book Of Practical Studies For Trombone, Book 1* and *2* [Belwin-Mills, 25 Deshon Dr., Melville, NY 11747].
4. *Fun With The Trombone* and *More Fun With The Trombone* [Mel Bay, Pacific, MO 63069].
5. *How To Play The Electric Bass* [Warner Bros., 75 Rockefeller, New York, NY 10019].
6. *Electric Bass Lines, Volume 1, 2, 3, 4,* and *5,* by Carol Kaye [Gwyn Publ., Box 5900, Sherman Oaks, CA 91413].

7. *Rhythms Complete* (bass clef edition) [Chas. Colin, 315 W. 53rd St., New York, NY 10019].
8. *30 Studies In Swing* (bass clef edition) [Sam Fox Music, 1841 Broadway, New York, NY 10023].
9. *Streamlined Etudes For Trombone* [Sam Fox Music].
10. *Ray Brown Bass Method* [Ray Brown Music, Box 270, Hollywood Station, Hollywood, CA 90028].
11. *Dance Band Reading And Interpretations* (bass clef edition) [Sam Fox Music].
12. *Basic Electric Bass, Volume 1, 2, 3, 4,* and *5* [Sam Fox Music].
13. *Jazz Improvisations For Bass Clef Instruments* [Gwyn Publ.].
14. *The Evolving Bassist,* by Rufus Reid [Myriad, Ltd., Lock Box 503, 2138 E. 75th St., Chicago, IL. 60649].
15. *Rhythmic Figures For Bassists, Volume 1* (eighth-notes) and *Volume 2* (sixteenth-notes) [Charles Hansen, 1860 West Ave., Miami Beach FL 33139].
16. *Electric Bass, Books 1, 2, and 3,* by Dan Dean (bass clef & TAB, record) Hal Leonard, 8112 W. Bluemound Rd., Milwaukee, WI 53213.
17. *The Studio Bassist, Books 1, 2, and 3,* by Dan Dean (bass clef & TAB, record) Hal Leonard.



3. READING

READING IN THE BASS CLEF

Most professionals take sightreading for granted—yours truly is no exception. However, through teaching, one becomes aware of the reading problems that students experience needlessly. I learned to read under pressure in studio work and although it was tough, there were many "shortcuts" I learned that can be passed on to you to make reading fun and easy.

To familiarize yourself with fundamentals in notes and timing, a book is necessary to refer to, such as *Easy Electric Bass* (from the Gwyn Publishing Co.). Fundamentals, such as quarter notes, names of notes, where they are on the instrument, ties, dots, flats, sharps, naturals, and key signatures, should be practiced from one of the many books on the market. One problem that arises when you start this learning process is to keep boredom from striking. Boredom precedes a state of mind that stops one from learning, thereby causing the student to think it is very difficult to learn to sightread.

If you learn a few notes on the bass, you can find other notes around them by relating back to the known notes. If the second note looks higher than the first, it is higher in pitch, and so on for lower notes (lower pitch).

One should get into the habit of writing beat lines (to pat your foot on) rather than writing in all the intricate 1-e-an-a garbage—studio musicians do this to aid reading. (See example No. 1.) In 4/4 time, any note with a down-beat marking is played when your foot pats down—any other note is played when your foot pats down—any other note is played when your foot is in the air—as simple as that. You aim for the downbeats. Intricate meter (timing) patterns should be memorized—like learning the times tables. 16th note patterns are figured out in double time (8/8) where instead of four beats to each bar (4/4 time), you play as if there are eight beats to the bar. (See example No. 2.) Any pattern that has double beams (16th notes) indicates a double-time (8/8) feel and begin with, should be felt in that time.

To go about finding notes on the bass, a little knowledge of the basic scale is necessary. At first, I actually wrote some of the names of notes above the staff to assist me. However, you really start learning more reading "fun" patterns and by relating one note to another. *Scales tend to inhibit your creative ear.*

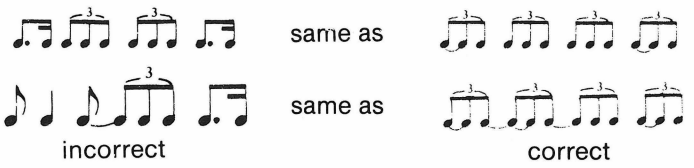
By writing downbeats to your music, you involve yourself immediately with the "feel" of meter—coordinating your foot and eyes with the music. If you write in the mechanical countings (1-e-an-a, etc.), you might get stuck reading those and not looking at the notes, hence the need for beat markings which the eye can catch without detracting from the actual notes.

Other tricks of reading involve scanning over the notes to aim for the downbeats which are used for reference purposes in meter. When music is copied or engraved, it is usually mathematically spaced so the eye can follow the logical downbeats of the notes. You can usually find the downbeats by the way 8th and 16th notes are lumped together by a common beam. Usually the first note of the connecting beam is the downbeat:

The only exception is when a rest comes first, such as:

It has been stated before that 16th notes indicate an 8/8 (doubletime) feel. Meter (timing of notes) is either in 2 or 3 (each beat divisible by 2 or 3) in all music (see example 4). The only time music is written incorrectly is usually in 3, meaning triplets. That is, when you see dotted 8ths and 16ths

mixed in with triplets, the music is played in triplet form (in 3) but written wrong to make it easier to read. For example:



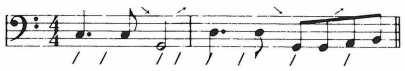
As you learn to read notes, several guides may come to you such as: visual recognition of octaves, learning the bottom, middle and top staff line notes, ledger line notes, commonly used notes (*C, F, G, A,* etc.) as well as relative notes (*C* to *D, A* to *G,* etc.). Try to avoid tricks such as *F-A-C-E* spells FACE—this has no meaning to music and actually deters you from actual reading, much like marking (1-e-an-a) to meter rather than feeling the beat.

It is not essential to know how to sightread to play good music. A good ear is important for learning bass lines from records and following chords to new tunes (which will be featured next month). But, if you would like to be a well-rounded musician and be able to have doors opened for you, whether it be for fun or money, you must be able to read. Attitude is very important. If you find yourself getting bored or forcing yourself to practice when a mental block comes, this negative feeling is going to keep you from the fun of discovering the little tricks of reading. Take a break, come back later and study, and make sure you have absolute quiet. *Be sure to keep your eyes on the music.* Even though you will memorize a short pattern very quickly, you learn to read by way of "osmosis," for familiar patterns will be recognized in new situations and you will be reading in a short time. This is the quickest, easiest and best way to learn how to sightread.

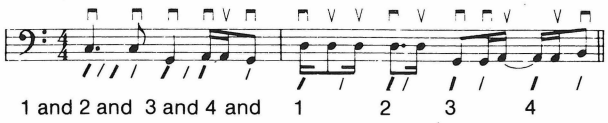
Attempt to write down any unique bass line you hear on a record that you particularly like. By writing you also learn to read. Every chance you get to read arrangements, go jump in the pool and do it. It's surprising what you can learn under pressure.

Carol Kaye

Example 1. (arrows indicate pitch direction)

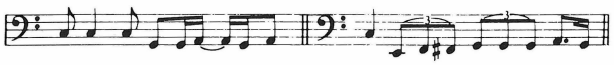


Example 2. (feet in 8/8 time)



Example 3. (feet in 8/8 time)

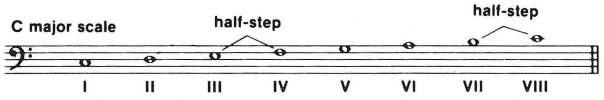
Example 4. (in 2) (in 3)



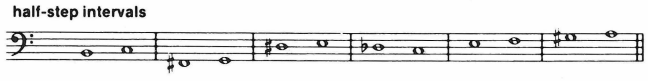
USING INTERVAL RELATIONSHIPS FOR TRANSPOSING

One of the first things you learn in a harmony class is that each note in a major scale is given a Roman numeral to designate its function (see Ex. 1). Distances between scale notes are called *intervals*. The smallest interval in traditional music is a half-step, or semitone. It is the distance from one fret to the adjacent one. You can see that no other note sould be placed between the two (Ex. 2). A two-fret interval is called a whole-step, or whole-tone (see Ex. 3). There is a definite construction pattern for major scales: All the intervals between consecutive scale notes are wholetones, except the III-IV and VII-VIII intervals, which are half-steps (see Ex. 1).

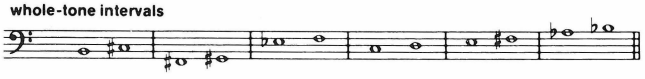
Example 1.



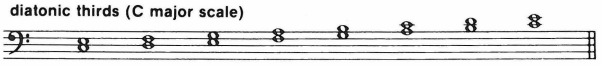
Example 2.



Example 3.



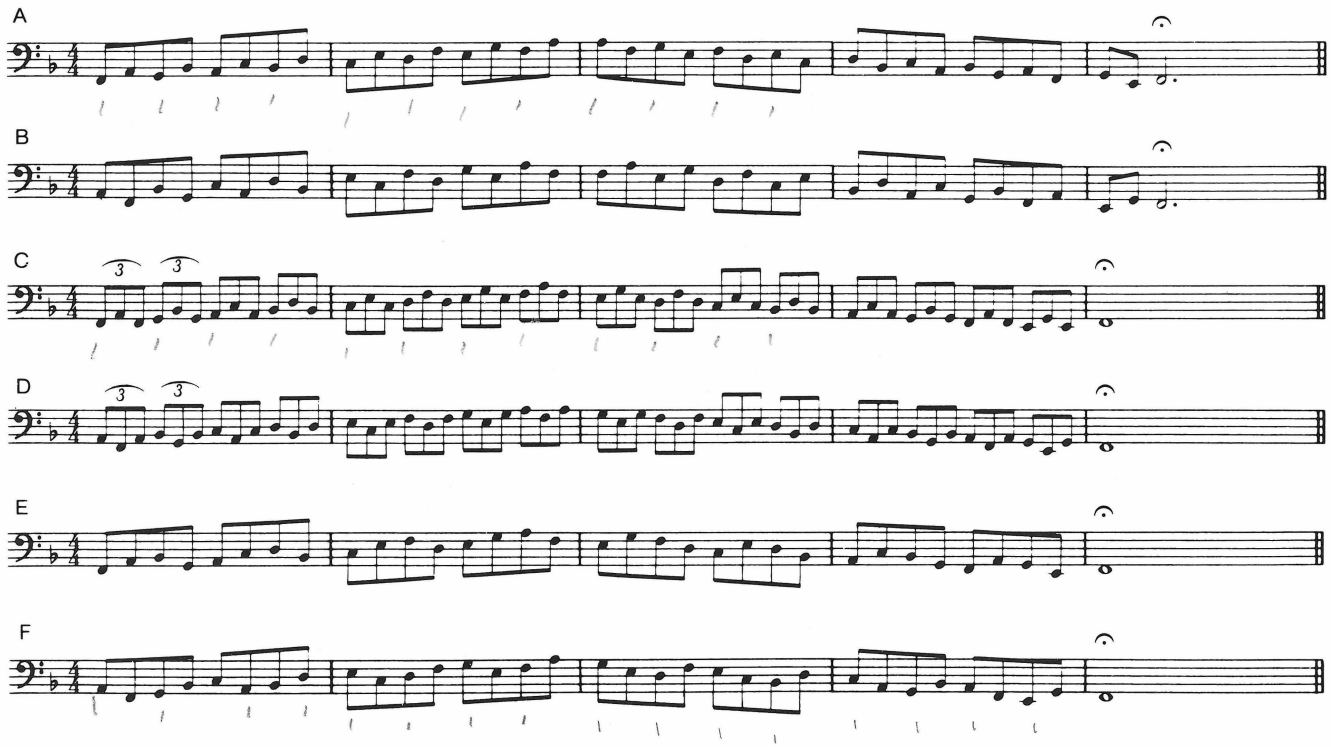
Example 4.



If you have to transpose a song from the key in which it is written to another, it is a lot easier if you use the numeral names for each note. For example, if you had a chord progression in *F*, where *F* went to *D*, you should think of it as I going to VI. If you had to move the song to the key of *Eb*, the chords would be *Eb* and *C* (I and VI in the key of *Eb*). In *D*, the I and VI would be *D* and *B*, respectively. Needless to say, the better you know the scales, the better you will be able to transpose. In Nashville, for instance, many of the record dates have written parts that consist only of numeral names.

The following exercises deal with the diatonic 3rds (see Ex. 4), which are adjacent 3rds within a scale. Sections C and D should be fingered with all three notes of each triplet in one position (so that you don't have to move your hand up or down the neck in the middle of the figure). Play these in all keys, starting in the lowest positions and using the open strings to avoid unnecessary shifting. These exercises are excellent for improving your ear, knowledge of keys, and fingering patterns.

Herb Mickman



READING WITH A JAZZ CONCEPTION

A few years after I started taking bass lessons I got a call to play with a 16-piece rehearsal band. The leader of this particular group was very specific about how he wanted the music phrased. I would hear him say: "Play that note short!" or "Play those as rolled eighths!" or "Accent that note!" My bass parts consisted of just quarter notes, so I rarely paid attention to all the remarks made to the brass or saxophone sections.

Several months later, I got into a better band with arrangements by several very prominent jazz arrangers. This time, the leader was really going into detail on how to phrase the music. He asked me, "How come you can swing when you play a solo, but not when you read music?" I was very upset about what he said. A lot of the phrasing ideas had been going in one ear and out the other. I didn't know what to do.

Finally, I started to listen more carefully at rehearsals, and I tried a few basic changes in my reading that really worked. Here they are: (1) A series of eighth-notes is played as an eighth-note triplet, with the first two notes tied. This could also be written as a quarter note followed by an eighth-note with the triplet sign over the notes [see Ex. 1]. Think of this as a shuffle rhythm. (2) Groups of eighth-notes are played legato—very smoothly, connected—as if a saxophonist were playing them with one breath [see Ex. 2]. (3) Quarter notes that are not part of a walking bass line are played short, or detached [see Ex. 3]. (4) Any note longer than a quarter note gets its full value.

If you have to play a phrase in unison with other instruments, you may have to follow the phrasing conception of another player. There may be variations on the four ideas presented here, so follow the leader's phrasing. Don't be afraid to mark the part.

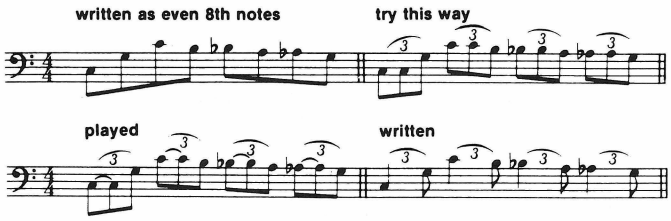
Here is a list of some excellent books to aid your study. They may be ordered from just about any big music store (be sure to specify "bass clef version"): *Rhythms Complete*, Chas. Colin Music (300 W, 53rd St., New

York, NY 10019), $3.95; *30 Studies In Swing*, Sam Fox Music (62 Cooper Square, New York, NY 10003), $2.50; *Dance Band Reading*, Sam Fox Music, $3.50; *Streamlined Etudes,* Sam Fox Music, $1.75; *19 Swing Etudes,* Sam Fox Music, $1.75; *Swing Rhythms For Trombone,* Belwin-Mills (16 W. 61st St., New York, NY 10023), $1.50.

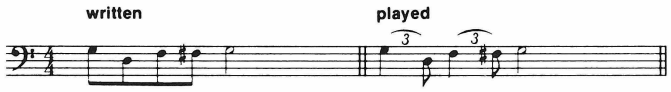
In the music below, try to play Ex. 4 and Ex. 5 with a swing feel. The bass line shown in Ex. 6 may sound familiar—it is written in 12/8 time. Play it in all keys and apply it to a blues progression. Notice how 12/8 gives the same feeling as eighth-note triplets in 4/4 time.

Herb Mickman

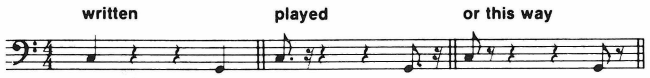
Example 1.



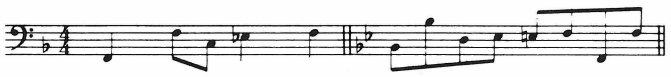
Example 2.



Example 3.



Example 4.



Example 5.

Example 6.

OVERCOMING POORLY WRITTEN BASS CHARTS

Once I played a big band rehearsal and ran into half a dozen things in the bass parts that made the charts difficult to read. I've been seeing these same six things now for the past 22 years, and I wish we could make arrangers and copyists aware of them. Some of these "rocks" are encountered by other instrumentalists as well, while others are found only on bass parts. I've listed some of these stumbling blocks, and I have tried to show a better way to notate them.

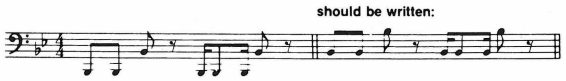
In Ex. 1 the notes are written out of the range of the bass (you'll have to transpose up an octave). A rhythmic figure with chord symbols is shown in Ex. 2. This is typical guitar notation, but for bass players it would be easier to have the actual notes written out. Ex. 3 shows how some arrangers write a rhythm in such a way that you cannot easily see the third beat of the bar. The rhythm shown in Ex. 2 is similar, though it is much more common. You have to be a mathematician to sight-read Ex. 3.

Ex. 4 illustrates the symptoms of what I call "poor copyist's bass line." The arranger told the copyist to write a walking bass line, and the copyist was just not familiar with bass line construction. Notice the correction which has its roots on the strong beats. Sometimes a tune gets recorded with wrong notes inserted by a copyist, and the bass player gets the blame. Ex. 5 demonstrates a pet peeve of mine: The incomplete chord symbols just don't give you a chance to sound your best—especially on a solo. Some people write only the root name. How are you going to choose the other notes when you don't know if the chord is major, or minor, or whatever? Just giving the root isn't enough. Ex. 6 is a typical bass figure, but without phrasing markings. Only an experienced player would play it with the right conception the first time through. Because it says "slow swing," the quarter notes are short and the eighth-notes are played legato, with a triplet feel.

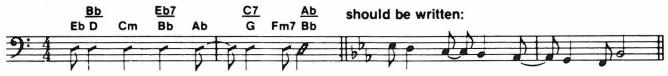
I hope you show this column to the next arranger who puts musical rocks in your path, and maybe you'll get a clearer bass part to read.

Herb Mickman

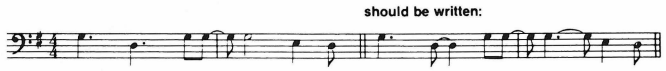
Example 1.



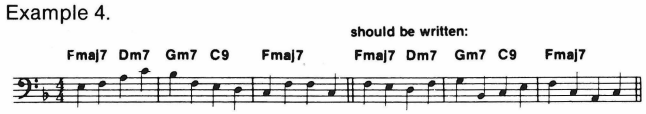
Example 2.



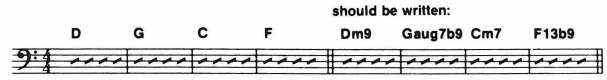
Example 3.



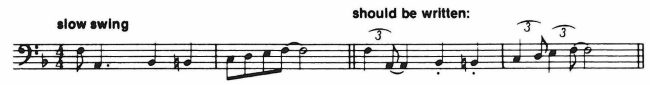
Example 4.



Example 5.



Example 6.



4. PRACTICING

SEVEN BASS EXERCISES TO AVOID

All bass players want to get better on their instruments, right? No big secret. We work for it by practicing all the scales, sight-reading, and ear-training exercises our teachers hand out to us. Music stores from sea to shining sea are well stocked with all kinds of music literature telling us how we should play. Music magazines such as our very own *Guitar Player* devotes pages so the mighty pens of columnists like Tommy (the Godfather) Tedesco or Howard Roberts or other fine columnists can offer positive inspiration. "Yeah, brothers and sisters, the Lord told *me* to tell *you* to accept the modes into your life. Practice, and ye shall gig forever!"

Yes, sir. There's certainly no shortage of musical goodies for us to get our hands sticky with. Now, the point of this article: Dedicated study buffs realize the importance of daily studying. Sure, practicing everyday can be a slightly difficult concept for a lot of people to get, but daily work ain't that hard. Certainly no harder than any pre-med student trying to differentiate between the pathogenesis of liquifactive and coagulative necrosis, don't you think?

Thus, with the vim and vigor within every person determined to cut their work load in half, borne out of the necessity of having enough time in the day to watch *All My Children*, we have the *shortcut*. Real clever stuff, too! I've seen these shortcuts being used and abused all over the place (America and Europe), so I know they're not the fancy of a chosen few. So, read on and tell yourselves *honestly* if you use any of these shortcuts or not. Here, for the first time, I will present the Seven Bass Exercises To *Avoid* For Better Bass Playing.

1. Practicing 15 hours a day after seeing your favorite bass player on a gig. This occurs a lot. It's easy to slip into an irregular practice schedule, picking up the bass at different times, casually playing your exercises, or swearing to yourself that as soon as the *Three Stooges* is over, you're going to work all afternoon. Then you find out that your favorite bassist, Stella Doro, who plays with the Fungoolz, is in town tomorrow night.

You get your ticket, and sit through two hours of mesmerizing interpretation of the note *E*, and in a mad rush of inspiration, you tear home to practice all night, all the next day, and into the next evening. Then bleary-eyed, you fall into exhaustive sleep until the next day, where—full of piss and vinegar—you repeat the schedule. Not since the Bataan Death March has so much energy been put out.

But you know how it goes. A week later, with eyes bloodshot, cheeks sunken in, speech slurring, we slip back into our regular lethargic practice schedule unaware that we really didn't get a whole lot of real tangible knowledge at all. Why not? Because pacing, as any good sports person knows, is the most effective way to use every bit of energy you have. So, by practicing, say, two hours every day, you expend enough mental energy to learn your lessons. After a period of time, you will see the results of your diligent hours of practice, I promise you. But attempting to do in a short amount of time what normally requires a much longer time simply is an unnecessary effort. It's like a weight lifter seeing Arnold Schwarzenegger for the the first time, and then going to the gym to curl 300 lbs. for 18 hours. Too much, too soon. Remember: Pace yourself.

2. The "Which is better—scales or arpeggios?" attitude, or "What am I getting out of this?" This one will be short. If you're fighting Joe Frazier, and he throws a perfectly timed left hook, the results are immediate: You're gonna fall. If you're fooling around on your girlfriend and she finds out, the results are immediate: You're gonna die. With music, the fruits of your labor take time to make themselves apparent. No one exercise is better or worse than another. A lot of guys want to know which exercise does it all. This way they can use shortcuts within their practicing. Come on, folks! Stop looking for shortcuts. Simply roll up your sleeves and get to work. Remember, every exercise is valid. What you'll get out of those individual little method exercises is an overall musical concept that you can use when performing. That's where good bass playing comes from.

3. "I don't practice because I hear it in my head." How about that? I've heard this from a lot of people. The idea is to sit around and think bass lines without an instrument. The close cousin to this concept is the "I can hear all this music in my head, but I can't play it on the bass" school of thought.

This attitude makes sense to me, however. Many musicians often hear music that may be difficult to execute. That's where daily practice comes in handy. By practicing new music, you are required to not only play the right pitches, but to play the correct rhythms as well. You move your hands onto unfamiliar areas on the neck, which requires accurate fingerings. All of these processes are done mentally, which simply adds to your musical reserves in the brain. In turn, they will be there to help you when you "hear" music in your head, and want to learn it on the bass. So, when you hear music, *practice* it. Believe me, that'll be the only way you'll get to really learn it.

4. The "Running nimbly up and down the neck in chromatic fashion" neurosis. I used to do this, so I'm an expert on the subject. In itself, this is nothing more than a loosening-up exercise. But where it goes awry is when the student bassist practices material which has been already learned and absorbed. Many times I have seen musicians going over familiar exercises or fingering patterns that have long since been committed to memory. Since these exercises will allow hands to feel more supple, the player gets the impression that some kind of improvement is taking place. *Au contraire!* Loose digits do not a melodist make. If you do run some of your old exercises, make sure you also practice new material. This way, you will grow in music besides growing in bass.

5. The old "squeezing the tennis ball" gimmick. Now, be honest. How many of you do it, did it, or know someone who does it? The reasoning for squeezing the ball is to develop hand and wrist muscles in order to increase your stamina when playing on that there big ol' neck. Red light! You don't want muscles in your hands; you want muscles in your sound! You want finesse, grace, accuracy, and dynamics in your hands, all of which come from practice. You can get a big sound from your equipment. Let your amps supply the punch and volume. If you think that by working out with the tennis ball (or any handgrip for that matter) you will build up hand speed, my question to you is, "Why are you building up hand speed anyway?" Tennis ball squishing won't help you to develop any *significant* speed (in fact, it can seriously damage tendons in the hands), and since knowledge of notes is required when playing bass, your speed can't mean anything because there isn't an increase of harmonic knowledge to go with your chops. Forget the ball. And remember: Practice will give you knowledge, playing will give you experience, and tennis balls will give you cramps.

6. Using heavy brass strings to build up hand strength. Same as above. The concept is to use thick strings to develop your playing endurance. The answer to that is, "We are bass players, not runners in the Boston Marathon." Endurance isn't an obstacle you have to overcome by creating physical barriers for yourself. If you normally use heavy strings, fine. No problem. For you other guys, all you'll get are calluses. Relax those hands, and your speed will increase threefold. Remember when you got tense on a recent gig, and your hands slowed up? Cool those tense hands and watch yourself play with style and grace.

7. Finally, the Chico Marx School of Music. This one's actually a joke. Chico was a piano player and member of the famous Marx Brothers. It was said that when he was a boy, instead of practicing the piano, he would soak his hands in warm water for 20 minutes. Feeling the warmth in his hands, he'd remove them from the bowl, dry them off, and say, "Well, I guess I practiced enough today."

This goes to show that as a pianist, Chico made a great comedian.

Jeff Berlin

TARGET PRACTICE

Back in 1957, I was living in New York City, and I was fortunate enough to study string bass with the late Fred Zimmermann. He was the first-chair bassist in the New York Philharmonic Orchestra for over 30 years and probably the most famous bass teacher in the country. His former students were in symphony orchestras in many nations, and bass players came from all over the world to study with him. His most prominent student in the jazz idiom was Eddie Gomez, although many other well-known bassists studied with him, including Paul Chambers, Charles Mingus, and Red Mitchell.

Fred seemed to enjoy teaching, and had tremendous patience and insight into the problems of beginners. Mr Z. only charged $4.00 for a lesson, and you always felt you had gotten something really important from him at each one.

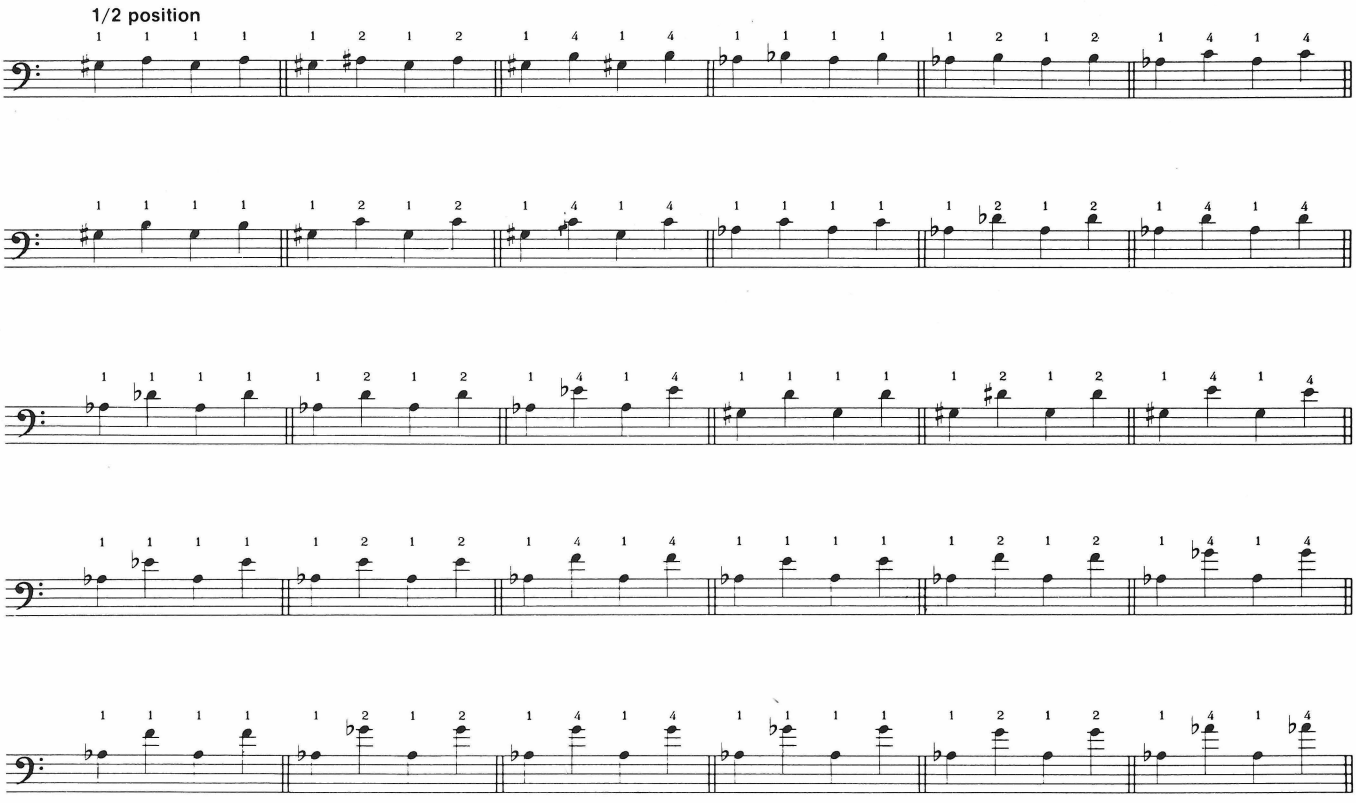
One of my problems was quite common among beginning musicians—playing in tune. Mr. Z. had a very helpful routine called "target practice." In the following target practice exercises, play all the notes on the *G* string, starting in the lowest position on the bass: 1/2-position (you may know it as the first fret).

Work on these exercises every day. Each measure should be played over and over many times until the notes connect smoothly, without buzzes or sliding noises. On a fretless bass, you must be much more concerned with exact intonation.

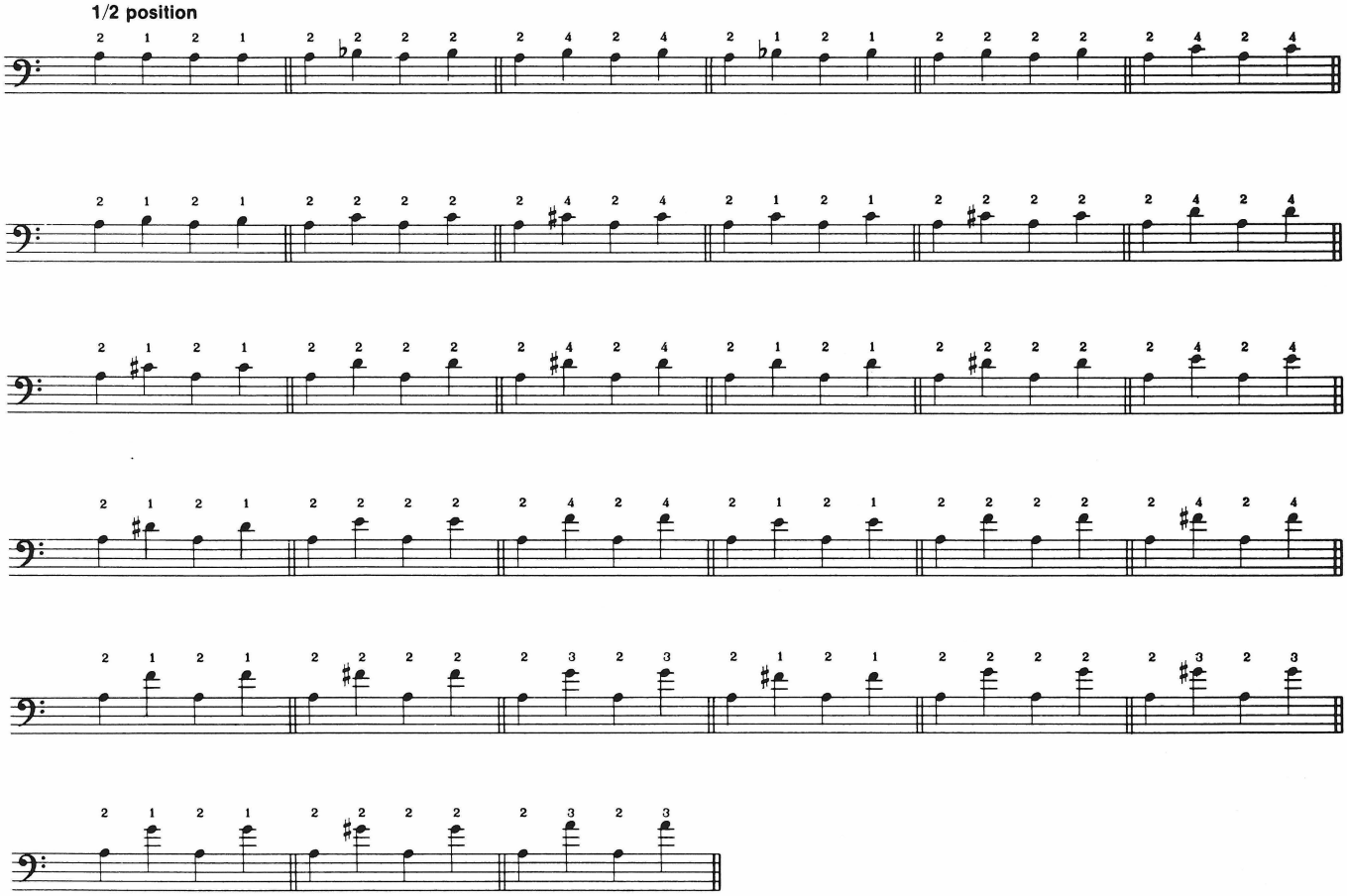
The first two lines of the exercise are easy, but later sections have bigger intervals and wil require you to play more slowly to feel the shifts. Always shift from one position to another without looking at your left hand.

Mr.Zimmermann probably never held an electric bass in his hands, but I'm sure he would be glad to know his target practice is being passed on.

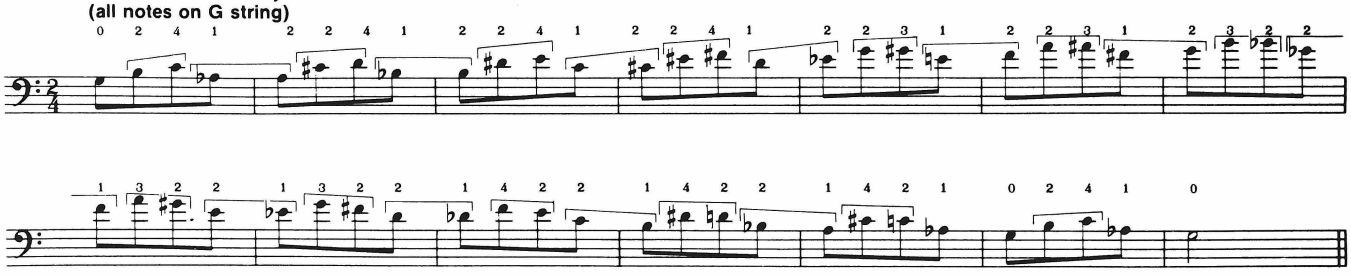
Herb Mickman



1/2 position



Mixed chromatic major thirds:
(all notes on G string)



(┌─┐ means play note below within one position — no shifts)

DEVELOPING TIMING

Time is King. Time is boss. Time is the Godfather. Time is James Brown, Miles Davis, Wilson Pickett, Sam Cooke, and Wes Montgomery. Time is Jimi Hendrix, John Coltrane, Bill Evans, Cannonball Adderly, Junior Walker, and Sly Stone. Time is James Jamerson, Paul Chambers, Ornette Coleman, and the Beatles. It is Roberto Duran, Muhammad Ali, Joe Frazier, Yaqui Lopez, and Alexis Arguello. Time is Baby Laurence, Fred Astaire, Harlem in the '40s. Anything that grooves, moves, swings, or pops is time. Drifting isn't time. Being broke, missing your favorite group at the Bijou, or eating cold pizza isn't time. Sitting through three hours of an Annette Funicello film festival—that's *doing* time.

All right, Gerry Cooney fans, let's get to it! Those bassists who know me are aware of how seriously I incorporate the concept of time into my bass playing. That's what we bassists are supposed to do. Do it well, and you'll work forever. But if you rely on chops alone, you may be respected as a great technician, although you won't be considered for gigs when the bass chair becomes vacant.

When the time isn't happening, everyone can tell—from the musicians to the waitresses (club owners, by the way, don't usually give a damn how lousy your time is, as long as all your friends pay their $3.00 cover charge and are scarfing down two Budweisers per set). It's easy to laugh off a bad note or two because a lot of people simply won't hear it. However, all people possess a feel for good time. That's why disco was such a hit. Everyone could dance to it. Even little kids rock back and forth when the radio's playing, and people from nonmusical backgrounds can tap their feet to Olivia Newton-John singing "Let's Get Physical." Everybody understands time because they can *feel* it.

Let's define what time is. First of all, time doesn't mean "a metronome" or "letter-perfect-don't-speed-up-a-nose-hair-or-you're-fired." And there are plenty of records in all music idioms where the groups speed up or slow down a little. So, make sure that if there are any tempo changes, they're group changes rather than just an individual player screwing with the time. The answer for this situation: Listen to each other *closely*. Tempo changes are okay. Heck, every airline pilot you've ever flown with revs up or pulls back on his engines in order to get the proper speed to fly his plane at. You have to use that same flexibility in your group for the same reason. If you don't, you'll miss LaGuardia Airport by five miles and crash into a porno movie theater in Times Square.

Time is the ability to interpret the pulse within the music and the musicians playing the music, and using your instrument to complement and support the pulse. That's it! Nothing else. It doesn't matter if you do it with your volume on 1 or 10. That's *taste*. It doesn't matter if you do it with one note or a thousand. That's *style*. And it doesn't matter if you do it within a bebop eighth-note concept or a loose, free-floating melodic style. Keith Jarrett's liquid piano approach floats through the chord changes with a delicious "conversational" style of time, as does Wayne Shorter's saxophone. Allan Holdsworth and Eddie Van Halen also lean towards a floating linear style more than someone like Neal Schon or Steve Morse, whose different approaches to the electric guitar still retain even note-playing styles within the 4/4 bar. Bassist Larry Graham, the daddy of the thumb-style playing technique, also approaches the 4/4 bar using quarter, eighth-, and sixteenth-note syncopated patterns which break up the bar into a rhythmic popcorn machine. This style requires the player to have his time together because so much of it depends on accents of the rhythm that could sound weak if not done correctly.

I also suggest listening to Will Lee, who played on several Brecker Brothers albums, and is one of the finest funk bassists in the country. Check out the excellent Marcus Miller, now with trumpeter Miles Davis—he's recorded on many things coming out of New York. Also listen to Victor Bailey of Weather Report for some fine rhythm-section bass playing. And check out my favorite funky bassist, Francis Rocco Prestia,

who has single-handedly defined the Oakland sound of soulful bass playing during his tenure with Tower Of Power.

Finally, I want to thank my music teachers who have helped me over the years and Journey's drummer, Steve Smith, who attended the Berklee College of Music in Boston with me in the early '70s. We were inseparable as young players, always playing and discussing music. Steve was forever after me to be aware of a good time feel in my playing. Mike Stern, one of Miles Davis' guitarists, used to come over to my apartment in New York to play duo with me. I later moved to Boston so I could be near him: Mike is such a phenomenal talent, and it was always an education for me to play with him.

When you play without a drummer (as we often did), you have to concentrate on the time a lot more, or else the groove will end up sounding like something performed by the Yasir Arafat Quartet. Stern also talked about strong time with a swing feel. Mike Clark, formerly the drummer with keyboardist Herbie Hancock, and one of the funkiest, swingingest drummers on God's earth, used to gig with guitarist Mick Goodrick and myself in Boston. Mike and I used to talk about time for hours, when we'd walk down the street, Mike would tap out his brand of rhythm on parked cars, garbage can covers, or anything else that resounded with a "dischh" sound. He'd tell me about how the time used to feel in Herbie's group, and what a gas it was to play with Paul Jackson (another bass monster).

Yeah, boy! I had the greatest teachers all right. And if they taught me about time, you can learn it, too. Just work on it, and pretty soon you'll see how hip it feels to sweat off ten pounds a night because you're grooving so hard. Getting time into your blood is the best transfusion of all. Tranfuse, baby, transfuse!

Jeff Berlin

PRACTICING WITH THE METRONOME

Shortly after my first few music lessons, my parents were told that using a metronome would help to improve my sense of rhythm. The metronome I got was an old-style wind-up model with the pendulum that swayed back and forth. I found it very difficult to play with at the tender age of eight.

Not long after I got the metronome, I dropped it, and it broke. I didn't use one again until ten years later. I had a drummer friend who used to practice with one while playing on a drum pad, and he said, "If you can hear the metronome while you are playing quarter notes, you are off." He asked me to try playing quarter notes evenly with the metronome, and I didn't do as well as I thought I would. It was then that I saw the benefits that could be derived from practicing with a metronome. So, the next day I went to the neighborhood music store and bought an electric metronome.

It really helped settle my sense of time. When I began working with the metronome, I would set it to click once for every quarter note in a 4/4 setting. I would then write down the metronome tempos on the page I worked on each day, so that I knew what my limitations were. Then, each subsequent day I would start at the last tempo that was comfortable, and try to surpass it—just a notch or two.

Soon I became aware that I didn't need the metronome ticking on all four beats. So I had it tick on beats one and three. A tempo of 120 then became a tempo of 60, etc. A few weeks later a trumpet player told me to set the metronome to click on beats two and four for a 4/4 measure. He said that it would swing better.

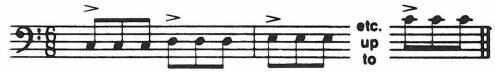
At first, I wasn't comfortable, but after a while I noticed that this way I got better feeling—especially for jazz and improvising. When the metronome was set to click on the first and third beats, it felt stiff in comparison to its setting on second and fourth.

I also began to practice not only etudes, but also jazz melodies with the metronome. I put the most comfortable tempo number on the page, and I always strived to increase that tempo until it was at the same speed as the record. However, there are certain things that a bass will never get out as quickly as a saxophone, trumpet, or piano. I soon learned to accept what could be done and be happy with it.

Below are some patterns I have made up from familiar *C* major scale. They should be practiced with the metronome at a comfortable tempo, where there is no struggling and no wrong notes. You should be able to play the exercises evenly in tempo. After working with each one and noting the metronome's tempo marking, play the exercises in all 12 keys. Do not advance to another exercise until you can play the first one in all keys smoothly. Don't expect to double your tempo in an afternoon. Start with the one-octave scales, and eventually try the two-octave ones. Play Ex. 1 and Ex. 2 both ascending and descending. Also, after playing Ex. 4 with the patterns indicated (one eighth-note and two sixteenth-notes), reverse the pattern (two six-sixteenth-notes followed by an eighth-note). Do the same for Ex. 6.

Example 1.

Example 2.

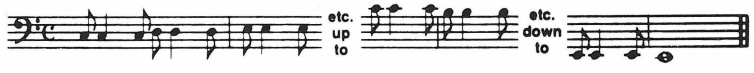


Example 3.

Example 4.

Example 5.

Example 6.



Example 7.

Bass players today are expected to have a great feel for time in many types of rhythmic grooves that didn't exist, say, ten years ago, and sight-reading has become far more complex. One of the keys to becoming a great sight-reader is to have the sounds of many common rhythms memorized. This ingraining of patterns comes from playing particular rhythms many times at all kinds of tempos. The first step often is working through the rhythm slowly, while the metronome keeps time for you.

In Ex. 8 are some great off-beats to be practiced. Try to play each measure at least four times perfectly before moving to the next one. Determine which tempo provided by the metronome is most comfortable for you, and write it down. Try to increase your speed., and keep track of your progress.

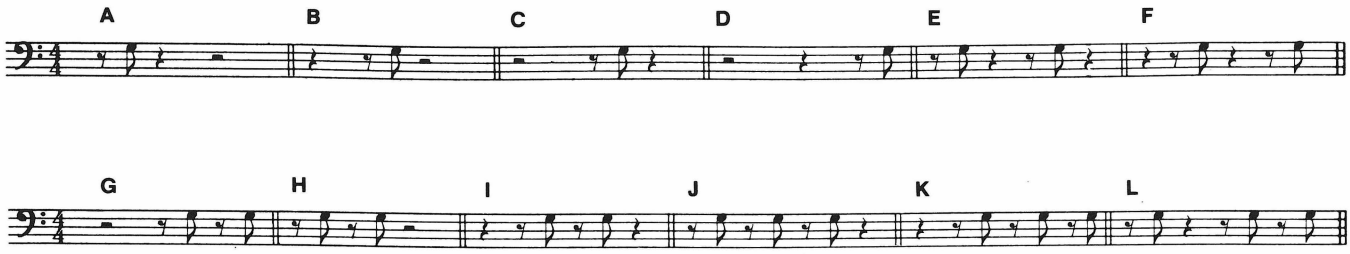
Ex. 9 has four rhythmic variations on the *C* major scale. Play each pattern up and down one octave in all 12 keys before going to the next one. Eventually work them up to two octaves. Once you master these, you can apply the same ideas to minor and modal scales.

Ex. 10 deals with some scale sequences containing various rhythmic displacements. Play the first one (A) slowly until you hear what is going on in the rhythm. Once you can play if perfectly in *C*, then try it in the other keys over one octave. Don't expect to master these in one hour; spend a good week on them. The second part (B) contains diatonic third intervals (occurring naturally within the scale) that follow similar rhythmic schemes.

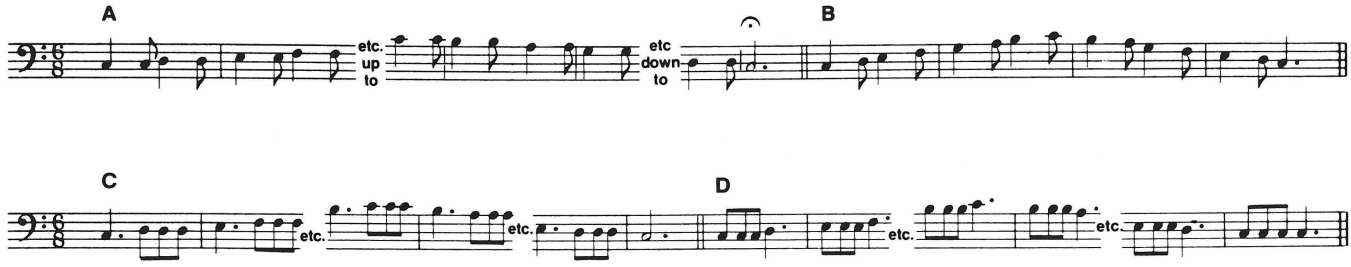
You will have to determine which tempos are best for you simply by checking your ability to produce strong, even rhythms as well as correctly intonated notes. This type of practice is like weightlifting: If you lay off for a while, you'll have to adjust the metronome's setting back a notch or two and work back up to the tempo you had achieved.

Herb Mickman

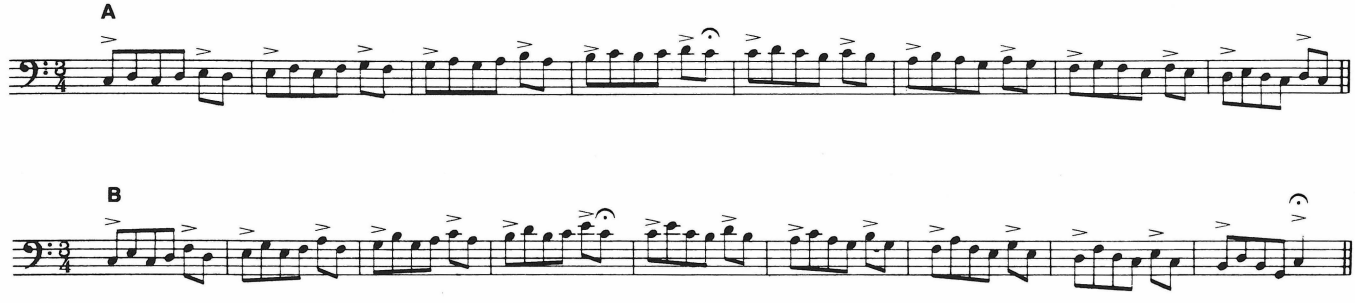
Example 8.



Example 9.



Example 10.



BEGINNING TO JAM

Performing with the Hampton Hawes Trio made me realize how difficult it is for the advanced student to apply his knowledge to group playing. After a few lessons to learn hand techniques and acquire many ideas for bass lines in all situations, plus work with an electric metronome, the player should attempt to start "jamming" (practicing with a group).

Check out the drummer to make sure that he is up to your capabilities—his sense of time should be more important than his technique on licks. Figure out what style tune you will be playing, learn the chords and play only the basic notes until an arrangement starts to form in which you will have more freedom for fills—especially after four and eight bars have gone by. Always establish a two-bar phrase (one bar in very few cases).

In 7th (blues or minor) chords include the basic notes of the root (first note of the chord), 5th and ♭7th (*C7* = *C, G, B*♭). The passing (secondary) notes of the 7th chord are the 3rd (♭3rd if minor chord), 4th, ♭5th, 9th (*C7* = *E, F, G*♭, *D*). The plain chords with no 7th need totally different sound. The basic notes are root, 5th, and 6th (*C* = *C, G, A*). The passing notes are 3rd, 4th, major 7th and 9th (*C* = *E, F, B, D*). The movement of 3rd, 4th, ♭5th, and 5th is good in either of the above cases (minor always requires a ♭3rd).

Try to acquaint yourself with these notes as you practice alone, so you know where they are as you think of the chord. Learn the standard blues changes in all keys—this is good for a starter in all styles:

BLUES (Key of *C*):

I7 (*C7*)

| / / / / | / / / / | / / / / | / / / / |

IV7 (*F7*) **I7 (*C7*)**

| / / / / | / / / / | / / / / | / / / / |

V7 (*G7*) **IV7 (*F7*)** **I7 (*C7*)**

| / / / / | / / / / | / / / / | / / / / ‖

Learn the blues in all keys of all styles: Jazz, boogaloo, Bo Diddley, Latin rock, early rock, etc.

Now you are ready to jam with a group. You may have to advertise by putting signs up on bulletin boards in supermarkets and schools if you can't find a group of musicians by word of mouth. When you start to play, first find out what key the music is in, and then listen to the guitarist or pianist for style. Listen to the drummer for the pulse—you are the glue for this action. You must establish a basic pattern for the rest of the band to play off of as well as provide a stable beat for the drummer to rely on and cook with you. You don't necessarily play the same accents as the drummer, but something to complement him. If he is accenting downbeats, try to provide motion by playing some off-beat patterns and vice-versa. The Joe Cocker cut I did of "Feelin' Alright" is a good example of this contrary motion. Listen to the two distinctively different parts.

Carol Kaye

FLEXIBILITY AND BREAKING OLD HABITS

I have found that through all the years I've been playing that many times, from playing the same thing over and over again, I would tend to form habits that later would create problems when I tried to do something different. Suppose for five years I'd been playing a *C* scale using the fingering 2, open, 1, 2, open, 1, 2, 3, and then someone gave me music (or I gave myself some music) requiring me to play a *C* scale using a different fingering because of the way the scale was placed in the particular song or passage. I would have to break that habit of fingering the scale the old way and play it another way for the new passage.

Now, a way to rid yourself of at least 70% of these sorts of problems is to : 1) become very familiar with the fingerboard and know where all of the notes are; and 2) make your hand flexible enough to be able to play all over the neck by taking something as simple as a *C* scale and playing it three or four different ways on the instrument.

I can remember many times when I played music written by Chick Corea, some of the lines he'd write would, at first, seem unfamiliar to me, technically—possibly because when he wrote them he was sitting down at a keyboard instrument. I have found that keyboard bass lines are quite different technically when they are to be played on an electric bass, and this also holds true the other way around. Personally, I find this very rewarding, because by playing these sorts of things I would be learning something new that I might not have discovered on my own.

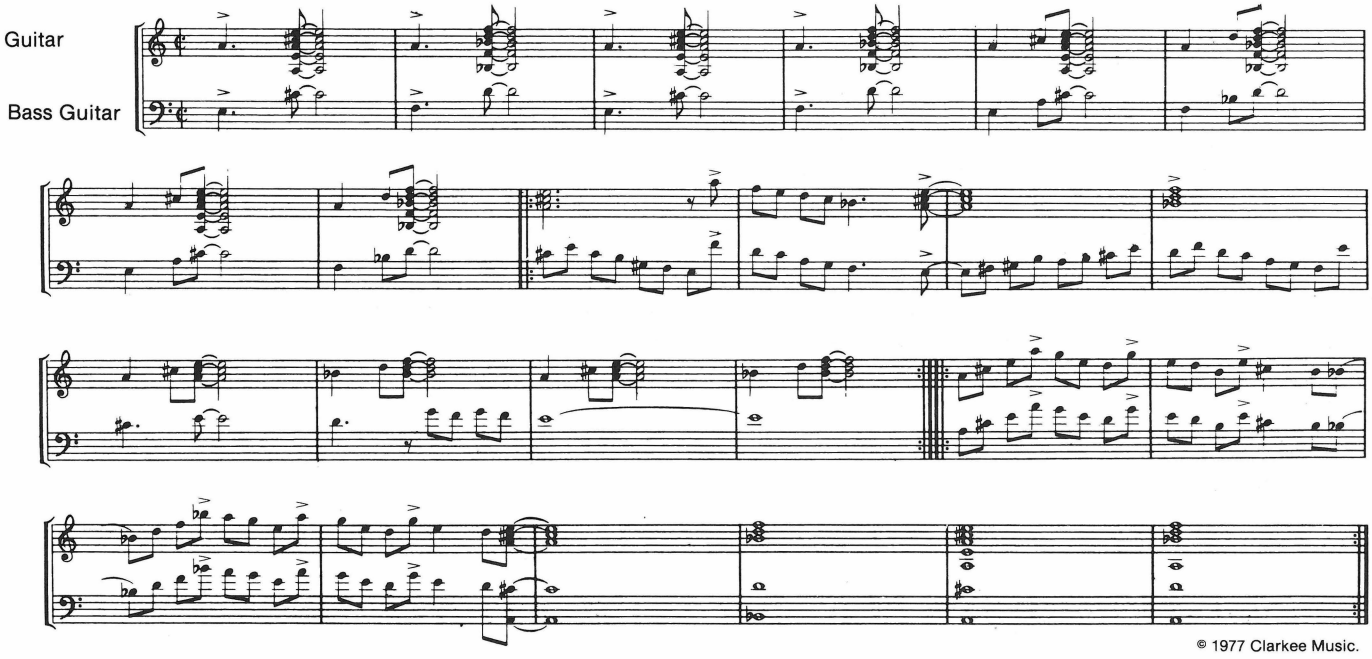
When I was in college I was auditioning for the Philadelphia Orchestra to play double bass, and one of the things I was preparing was a book of exercises which actually were excerpts of music that was composed by Richard Strauss. Boy, let me tell you—Richard Strauss wrote some of the most difficult stuff for bass I ever played! He had no mercy!

I think the key to this whole thing is, when practicing any sort of music, take a look at all the possibilities in which that one thing can be played. After all, variety is the spice of life.

Here's a piece of music I wrote for guitar and bass which should help you bassists develop flexibility. Both instruments fluctuate back and forth between *A* and *B*♭maj. Practice this duet at a very slow tempo, and gradually increase your speed until you can play it in a fast cut time.

Stanley Clarke

'Duet For Bass And Guitar' By Stanley Clarke



5. TECHNIQUE

PICKING: PICK vs. FINGERS

To use or not to use the pick. No doubt you've heard many pros and cons on the subject. The arguments for using a pick are the following:

1. More definite sound. Cuts through better.
2. Better attack. Solid sound.
3. Correct pick strokes go with the beat with resulting good "feel."
4. Important for professional work, especially recording.
5. Helps in learning sight-reading as correct pickstrokes go with the meter of the notes.

The arguments against using a pick are:

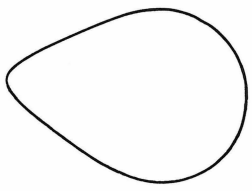
1. Clumsy to learn, especially for bass players.
2. Slower
3. Sound of fingers is better.
4. "Everyone" uses fingers.

True, picking has its place and fingers also have their place. With the correct strokes outlined below, you can gain as much speed as the fingers, if not more. I used the pick on all the Motown hits recorded on the West Coast between 1966 and 1969 ("Bernadette," "Love Child," "I Was Made To Love Her," "Get Ready," and for Marvin Gaye, Tammy Terrell, The Temptations, The Vandellas, and The Four Tops) with my treble gain turned down to get a deeper sound (less click).

The good bass player should know both ways: Fingers for jazz, ballads, bossa nova, and some rock; pick for pop, country and soul rock. The "pick" sound was popularized by all the recordings from "Boots" (Nancy Sinatra), to "Good Vibrations" (Beach Boys), to "Feelin' Alright" (Joe Cocker) by yours truly, and other bassists quickly followed suit. Being a guitarist first was an influence on this style of mine, but acoustical bassists can adapt to correct picking more quickly than most guitarists, as they do not have to unlearn "sloppy" picking techniques. It is not as important to attack *hard* and *even* on the guitars on the guitar as it is on the electric bass.

Let's take a brief look at finger style first. Most players anchor their right thumb about 3/4" above the "E" string, (or, on the top of the guard on the Fender bass—the lower black mounting can be removed and re-installed at that spot), arch their right wrist and usually alternate the first two fingers while playing. The instrument has to be held a little low on the right side to avoid discomfort.

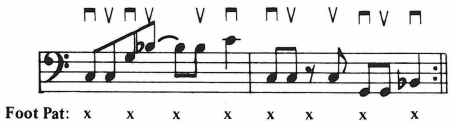
The pick style requires that the instruments be held so that the bottom of the thumb muscle can glide along a string as you are playing another string. When you strike the "E" string, simply lift up and off a little as if moving over an imaginary string (wrist should turn a little). Holding the pick is very important.



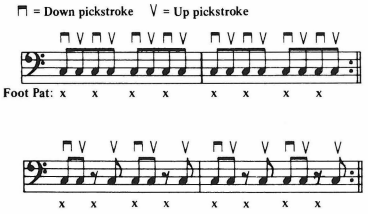
The pick should be hard with a shape like this. It should be held firmly, but not tightly, between the side of the index finger and the meaty part of the thumb. Any bigger pick and you're holding too much pick. If you have extremely large hands, the pick could be slightly larger, although still retain the same shape. Triangular picks are too clumsy and are usually too soft to obtain a good solid sound.

Now, with the right arm placed solidly on the front of the bass and the thumb muscle touching the "E" string approximately 1/2" above the pickup (wrist should be flat), you are now ready to pratice the following exercise to acclimate you to correct picking habits. If a pickup cover is in the way, remove it as it suits no purpose but decoration.

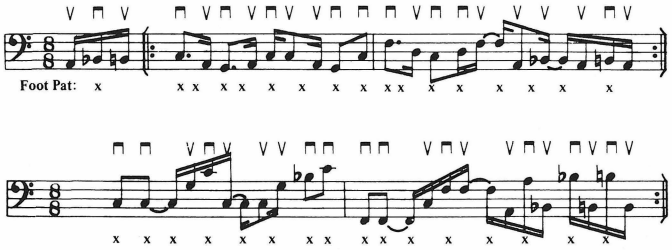
Start this exercise by patting your left foot at a slow tempo. Your right wrist will move your hand up and down in coordination with your foot. You pick *down* on the *down* beat, and *up* on the *up*beat. As simple as that, but it takes a little while to get the hang of it so have patience and go slow:



Remember to practice until it starts to feel natural to you. The right hand goes up and down with the left foot. For those of you who are not used to patting your foot, you may have to practice with the radio or records first. A lot of students have also reported success and speed while holding the pick and literally practicing the beat with the radio. Some travelling bassists do this practice on an airplane, which may look a little funny, but anywhere is okay while you are attempting to get the "feel" of it. Here is another piece of music which makes a good exercise:



Boogaloo (double-time funk) should be felt instead of 4/4 (four downbeats). You merely double up on the beats for the *entire* time. "Feelin' Alright" (contained in *Electric Bass Lines No. 4* by yours truly) is a good example with the two moods of the tune illustrated below:



Give yourself a lot of patience with the pick style. Practice at home first to get the "natural" feel with the pick before you use it on the job. Don't rush into it. *Never* play with wrong pick-strokes. After a while, you may have to prod yourself into using the pick on the job after a period of practicing at home. This job practice (the "red light" is on) is invaluable as a time saver that helps you to quickly polish your professional sound. If you start stumbling, immediately loosen up your right hand. You are probably holding the pick too tight and playing too hard. Don't forget to keep the right part of your right hand up in the air slightly. This keeps the thumb muscle *down* on the string(s). *This is your anchor—Use it.* Keep the right thumb straight. The right thumb knuckle should be immobile. Forget about the string bass method of moving that thumb knuckle when you bow—it must be kept absolutely straight with a pick. The electric bass is a totally different instrument, and you have to allow yourself to approach it as such. The only movement of the right hand is in the *wrist* with some movement allowable in the right arm for octave passages. If your muscles start getting tired, loosen up. By the same token, you shouldn't play so lightly that the amp gets all the "sound." You can produce strong, cleaner sounds by a lot less "pounding" and more loose, lighter pick motion and still sound very forceful. Be sure your left hand has the same freedom—remember you need a lot less strength for this instrument.

Don't let other players discourage you from learning this essential pick technique as they have probably not been exposed to it and will put it down. Once you become used to it, you will love it and the pick will feel like an extension of a finger. The only part of you that will become sore at first is a muscle on the right side of your arm. This will go away quickly with practice. If anything else becomes sore, you are doing something wrong.

Carol Kaye

BASS POPPING TECHNIQUE

Without a doubt, one of the most popular sounds produced by today's bassists is the "pop," or "slap"—a piercing, snappy effect that moves the bass line to the foreground of even the most lavishly orchestrated music. Most often heard in a funk context, the popping of notes is becoming increasingly diversified to the point of being firmly planted in numerous popular musical settings. Although popped notes show up frequently (listen to the radio, TV, or records—they're everywhere), many bassists have either avoided the style or failed to master the technique. Surprisingly, for as good as it sounds, getting the snap is not really difficult. With a solid start and a bit of practice, any bass player can assimilate popping, and make it another natural part of his or her style. Try it—you may even surprise yourself and bring out a facet of your playing that you never knew was waiting to be freed.

Even though numerous well-known bass guitarists incorporate this technique, nobody knows for sure the musician who first popped a string. When the string bass initially became popular in familiar forms of music in the early part of this century, some players actually hit the strings with a drumstick to get a crisper attack and more volume. Some literally flogged their strings with the right hand—a similar approach, but naturally one that required a good, strong hand.

Such techniques never really translated to the electric bass since players were generally pleased with their equipment's volume. But in the 1960s, a time of rapidly increasing volume and experimentation, new approaches were tried. Credit for bringing the popping technique to popular music is generally given to Larry Graham, who played bass with Sly & The Family Stone and later Graham Central Station. It was the culmination of his early experiences in a drummerless duo with his mother that led him to a more percussive style. From the first pops and snaps of his teens Graham built a technique that became one of the most identifiable features of Sly's music.

In the 1970s other bassists emerged with this popping technique in their bags of tricks. Among them were Stanley Clarke, Louis Johnson, Verdine White of Earth, Wind & Fire, and Jaco Pastorius of Weather Report. In almost every form of popular music today, there is at least one outstanding popper.

I first learned bass popping a few years ago from my old friend, Stanley Clarke, who had replaced me in pianist Horace Silver's band in 1970 when I left to join Mongo Santamaria. While on vacation in Florida, I met Stanley again, and I asked him to show me how to "play that thing with your thumb." The basics Stanley taught me were the key. The rest only required practice.

An important consideration for bass players wishing to learn this style is proper strings. Often the strings in a particular set are not balanced with respect to sound output and flexibility. You can generally deal with the uneven volume levels by raising or lowering the pickup's pole pieces, or

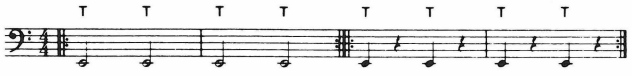
adjusting the height of the pickup itself. But obtaining strings with consistent suppleness may pose a problem.

You want strings that give when you pull them, and spring back after you pluck them. Try the various brands, ask music dealers what they recommend, and ask fellow bass players what they've found in their travels. For the brightest tone, check out round-wound, half-round, or quarter-round strings. Flat-wounds will most often lack the bite that the other varieties have. Also, remember that a string's flexibility may not be related to its gauge. Variables such as the materials used in construction, the length of your bass, and the string gauge's relationship to its open pitch may all affect performance.

Posture also enters into popping. Make sure that you place your hands in a comfortable position. There are two basic ways to place the right arm and hand to facilitate the technique. In Fig. 1 and Fig. 2, note how the right arm lies comfortably on the body of the instrument. The thumb can either be in an upward position—parallel to the strings (Fig. 1)—or lie perpendicular to the strings (Fig. 2). In both cases, notice how the 1st and 2nd fingers on the right hand are poised directly over the *G* and *D* strings. By having them in such close proximity to the strings, it is easy to snap or pluck them on an up-stroke, while the thumb can hit on the down-stroke.

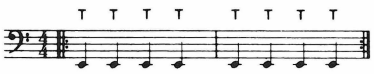
These three exercises are designed to help you gain control over your thumb. They should be played on the *E* and *A* strings. Although they're not very complicated, they should be played with care nonetheless. Count each beat evenly (or use a metronome), and try to attack each note cleanly, so that the sound is crisp, not mushy. Note that the letter "T" above the note means to hit it with the thumb.

Example 1.



Example 2.

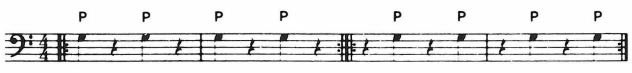
Example 3.



Since your 1st and 2nd fingers are placed right over the *G* and *D* strings, they are always ready to snap; you may snap either string with either finger. Do this closer to the fingerboard then to the bridge, since there is less string tension working against you near the fingerboard. Experiment with just where you place your right hand, since each bass is different. To snap the string, get just the tip of the finger under the strng and pull quickly with a snap of the wrist. The photos show how to pop on the *D* string with the first finger (Fig. 3). and on the *G* with the 2nd finger (Fig. 4).

The following exercises involve snapping on both the *D* and the *G* strings. Use only the 1st finger to play each exercise, and then use only the 2nd finger. Next, alternate fingers for each note (1st finger, 2nd finger, 1st finger, and so on). Remember, whenever you see a "P" above a note, pluck it either with your 1st or 2nd finger.

Example 4.



Example 5.

Here are two ways of positioning the thumb while popping. Fig. 5 shows the thumb pointing up, with the wrist raised off of the bass; Fig. 6 shows the thumb pointing down with the wrist closer to the bass's body.

The next four exercises combine the thumb slap and the finger pop. They are straightforward, and only contain the techniques covered so far.

Figure 1.

Figure 2.

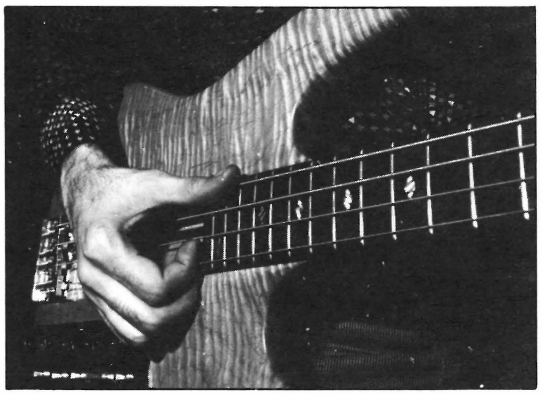


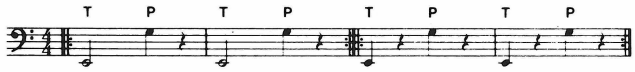
Figure 3.

Figure 4.

Figure 5.

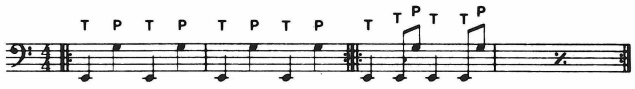
Figure 6.

Example 6.



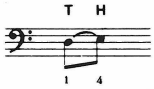
Example 7.

Example 8.



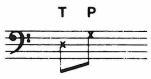
Example 9.

The following examples include two more techniques. The first is called a hammer-on, or slur. You probably use it already, but a popping style adds a whole new dimension to it. A hammer-on is executed by fretting a note with the left hand, plucking the string with the right hand, and then fretting a note higher on the same string (without moving the left hand from its original position). The "H" written above a note indicates tht it should be hammered on:



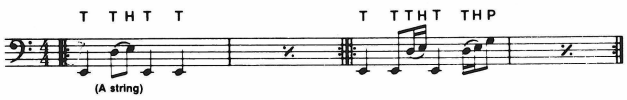
For the example shown, use the 1st finger to press down the *D* (5th fret, *A* string), strike or pluck the note, and press down the 3rd or 4th finger on the 7th fret. This will produce the *E* note.

The second technique, called the undefined note, is not often used except as a rhythmic device. As the name implies, there is no clear pitch produced when you strike the string, but as with drums there is a relative pitch (high or low, in varying degrees). It is a good percussion sound, often used by Jaco Pastorius, Larry Graham, Stanley Clarke, and others. It appears on sheet music like this:



To play the undefined note, place a left-hand finger lightly upon the string at the note that correspond to the "X" in the music; don't press the string to the fingerboard. Now snap or thumb the string with your right-hand thumb or fingers)a "T" or "P" above the note will tell you which to use). The first two examples here include only hammer-ons, but the third one makes use of the undefined note as well.

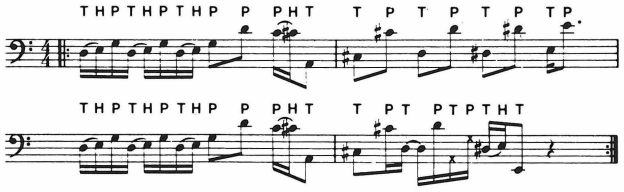
Example 10.



Example 11.

Naturally, you will want to go beyond mere exercises to vent your creativity. Try the following funk-style bass line. It should wet your feet and let you know what you're up against. Run through it at a comfortable pace until you get the technique under control: then worry about your speed. You won't always be afforded this luxury—on the bandstand or in the studio you must often be able to sight-read just about anything they give you. But for now, the idea is to learn the technique.

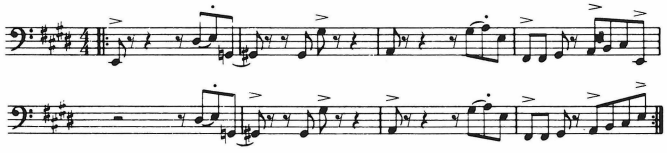
Example 12.



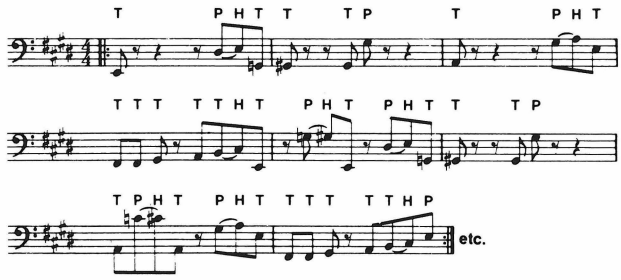
The final two examples illustrate bass popping in action. The first is the part that was given to me to play on a commercial. The second is the way I actually played the part after I renotated it with popping and additional fills. In the reworked part, I added the fills in bars 5 and 7. I removed the slurs between bars 1 and 2, and between bars 5 and 6. Notice the added hammer-ons in bars 4 and 8. This piece is just one example of how a bass part can be spiced up with popping.

Play both of the following examples as they are written, and you'll hear the difference. With time and experimentation, you will doubtless come up with many of your own. Try popping on the tunes you do with your band (preferably at a rehearsal—you never can tell if something will work for the first time at a gig).

Example 13.



Example 14.



Here is a short list of records that feature bass popping techniques. You probably have other favorites, so listen closely to them, too.

Ken Smith

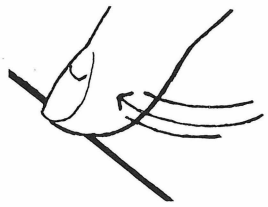
A SELECTED BASS POPPING DISCOGRAPHY

Larry Graham: (with Sly & The Family Stone) *Greatest Hits*, Epic, PE 30325; (with Graham Central Station) *My Radio Sure Sounds Good To Me*, Warner Bros., BSK-3175; *Star Walk,* Warner Bros., BSK-3322. **Charles Meeks:** (with Chuck Mangione) *An Evening Of Magic: Chuck Mangione Live At The Hollywood Bowl*, A&M, SP-6701. **Robert "Pops" Popwell:** (with the Crusaders) *Images*, ABC, BA-6030. **Stanley Clarke:** *I Wanna Play For You*, Nemperor [dist. by CBS], KZ2 35680; *Modern Man*, Nemperor, JZ-35303; *Journey To Love*, Nemperor 433. **Verdine White:**(with Earth, Wind & Fire) *I Am*, Columbia, FC 35730; *All 'N All*, Columbia, JC 34905. **Louis Johnson:** (with the Brothers Johnson) *Look Out For #1*, A&M, SP-4567. **Andy West:** (with the Dixie Dregs) *Free Fall*, Capricorn, CP 0189. **Marvin Isley:** (with the Isley Brothers) *Winner Takes All*, T-Neck [dist. by CBS], PZ2 36077. **Jaco Pastorius:** (with Weather Report) *Heavy Weather*, Columbia, PC 34418. **Alphonso Johnson:** *Yesterday's Dreams*, Epic, PE 34364.

THE "IN & OUT" TECHNIQUE

Diagram I

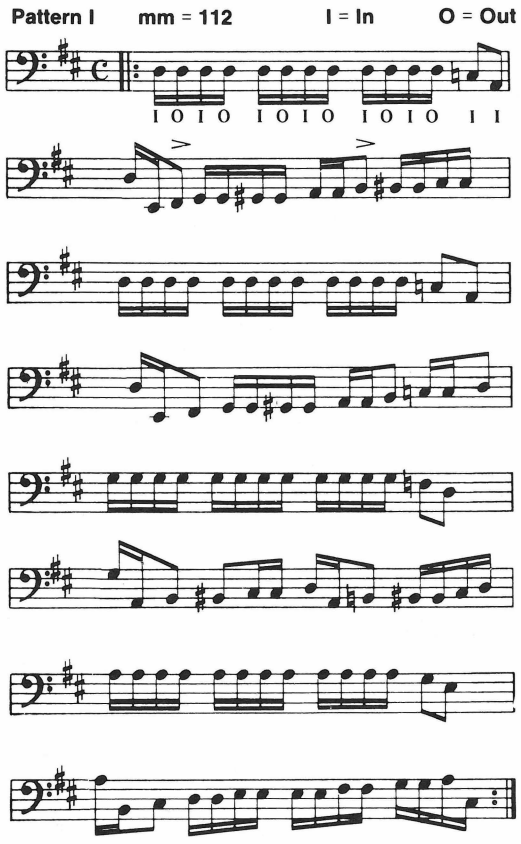
Diagram II



This technique promotes speed with *feeling* while playing sixteenth-note type bass patterns (Pattern I). Using the tip of the finger, play the first note of the pattern *in* towards the body (Diagram I) and play the second note *out* from the body (Diagram II). Continue in the same manner until you reach the two consecutive eighth-notes. Each note of the eighth-note group is played *in*. Continue throughout Pattern I as an exercise at different tempos, to strengthen your finger and for comprehension of the "in and out" technique.

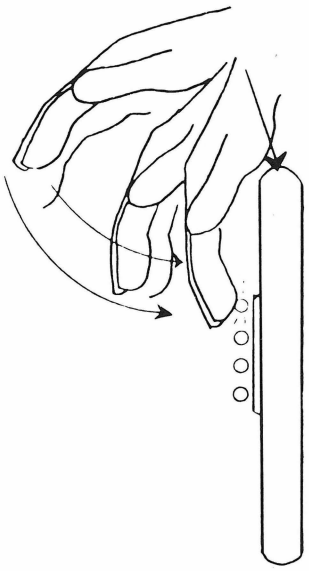
The string distance from the neck of the bass is important in making the "in and out" technique comfortable and practical for each individual. A musician who has a soft playing touch and/or soft nails should set the strings close to the neck. This puts the strings closer to the pickups for a soft touch and saves your nails from excessive wearing, tearing, and breaking. Use your discretion and logic when altering your equipment. If you have a strong touch and your nails do not break easily, it may not be necessary to lower your strings.

Chuck Rainey



THE SLAPPING-WOOD TECHNIQUE

When you need to improvise a bass pattern, the sound of the notes can be altered to achieve melodic and/or rhythmic interest. The slapping technique produces a gutty, raunchy string-against-wood sound. It may also resemble a low percussive trombone or a musical grunt. The sound may vary, depending on the individual use of the technique, which involves a hand slap on the *E* string. The hand should be firm, but with its relaxed natural curvature.



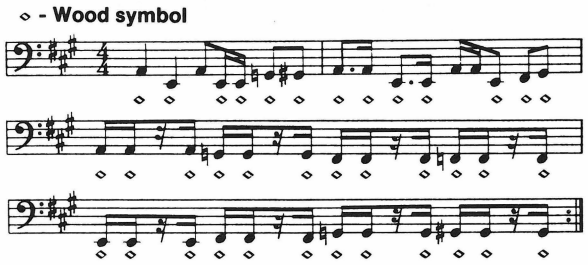
As you slap the string with the extended fingers, the heel of the hand simultaneously hits against the top of the body of the bass. The extended fingers bounce right off the string naturally. The idea is to get the extended fingers to feel like one unit, supported by the wrist and controlled by the wrist muscles (like a drumstick in a drummer's hand).

When you slap, you should hear the note fingered, the string striking against the neck of the bass, and the complete value of the note intended. If the complete value of a slapped note is not achieved, consider the following check points: 1) hitting, banging, or slapping a note too hard can prevent the string from ringing its intended length; 2) string distance from pickups—the string may be set too far from or too close to the pickups; 3) type of strings you are using; 4) volume of bass; 5) volume of amplifier.

The slapping technique is used on the following albums: Aretha Franklin, *Young, Gifted And Black*, "Rock Steady" and "Border Song" (Atlantic Records, SD 7213); Quincy Jones, *Body Heat,* "If I Ever Lose This Heaven" (A&M Records, SP 3617); Quincy Jones, *You've Got It Bad,* "Sanford And Son Theme" (A&M, SP 3041); Quincy Jones, *Smackwater Jack*, "Theme From Ironsides"—bass solo (A&M, SP 3037); Roberta Flack, *Quiet Fire,* "Go Up Moses" (Atlantic, SD 1594).

Remember, sensitivity is necessary to attain the desired sound. Don't just hit, beat, or slap the bass without feeling. The following pattern can be used as an exercise to help you acquaint yourself with the feeling necessary from this technique.

Chuck Rainey



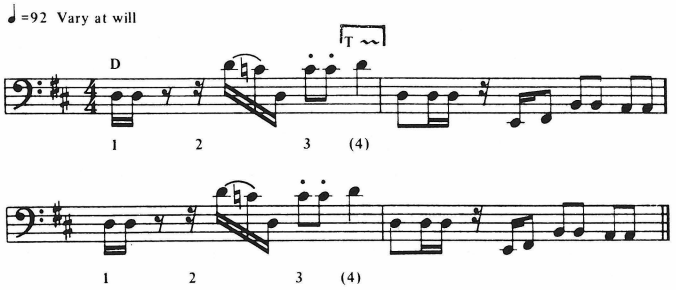
FINGER TREMOLO TECHNIQUE

Sound creates style as much as technique. The four-bar segments of the three different bass patterns below can be played in many different styles by changing the *sound* of a few notes. By using a finger tremolo on the notes shown beneath the brackets, the pattern *feels* different, while maintaining its original structure.

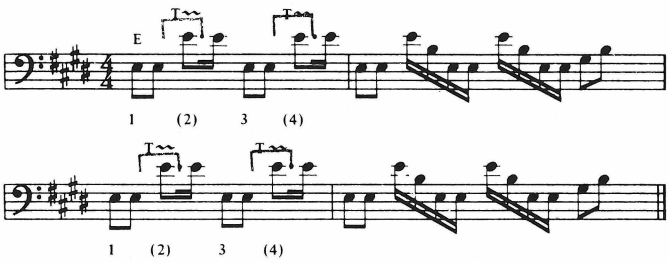
The patterns indicated below are also explored in my mail-order course, *The Modern Bassist's Techniques Of Success*. This technique is also described in my book, *Disciple Of Emotion*. Make up your own patterns and experiment. Finger tremolos are used on the following tunes: "Shining Star," by Earth, Wind & Fire, on *Way Of The World* (Columbia Records, PC 33280); "Funk Freak," by White Heat, on *White Heat* (RCA, APL1-0853); "I Get Mad," by Joe Cocker, on *I Can Stand A Little Rain* (A&M Records, SP-3633); "You Are The World," by Donald Byrd, on *(High) Steppin' Into Tomorrow* (Blue Note Records, BN-LA 368-G).

Chuck Rainey

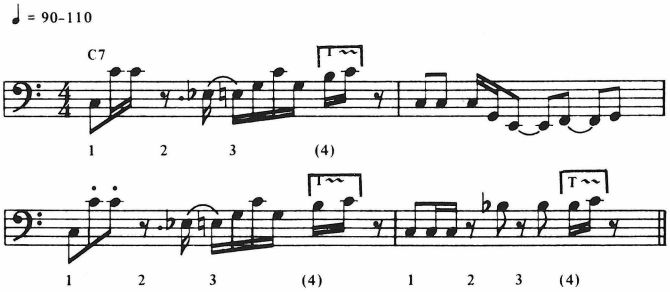
Tremolo played on 4th beat T = Tremolo



Tremolo played on 2nd and 4th beat



Tremolo played on 4th beat



THE LEFT HAND

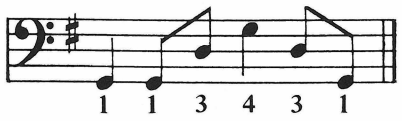
People have seen me play at live concerts or at conventions and invariably say, "You make all those licks that sound so hard, look easy." I find myself repeating, "It's in the hands—the hands!" Actually, a player can be fast, fluid, accurate, and mostly relaxed if he (or she) follows the basic outline below.

The trick is in using the left thumb as a pivoting home bass. The thumb points toward the nut of the neck and should be very close to the middle of the back of the neck. Equal pressure should be applied between each finger and thumb when playing a note. Normally, the thumb rides a little *behind* the first finger and if a note is up a little out of range, DON'T MOVE THE THUMB! Pivot (rotate) it so it thrusts the entire front part of your hand up (don't stretch the fingers) to reach that note. Keeping the thumb there helps you find your original position again. Most players tend to lift their left wrist up (this deters good hand position); keep the wrist down so that the fingers have access to the fingerboard. You don't need to play on the very tips of your fingers like a guitarist or violinist, nor as low as a string bass player either. Remember the electric bass requires an entirely different approach than the guitar or string bass, so don't let anyone steer you wrong.

Keep the front part of the left hand relaxed. Don't stretch except for the very fast notes. Play almost on top of the fret, let go of each note once you're on the next one. String bassists tend to hang onto notes too long and press too hard, as they are used to heavy pressure. As you play up and down the neck, the thumb should usually follow the front part of the hand (like a caterpillar motion). It rarely jumps *with* the whole hand. This is where most players make their mistakes—they work too hard and lose their place easily. The more "up" on the neck the hand goes, the further "back" the thumb slides, so that when you jump to a lower note, the thumb jumps very little, while the hand can move almost an entire octave without missing a notes.

Although my previous musical examples have indicated the use of open strings, I prefer NOT to use open strings because your impact is heavier and greater while playing closed positions. Open strings are good as fast time fillers (x-notes), or for special open ringing sounds, but otherwise timbre and playing ease suffer.

In this case, the fingering goes 1-2-4-4-4 (or, 1-2-3-4-4 on smaller necks) going up chromatically (leave the thumb there), and 4-2-1-1-1 (or 4-3-2-1-1 on smaller necks) going down chromatically; again, leave the thumb there. If something hurts, check to make sure your wrist is lowered and your elbow isn't clenched to your body—the arm should be relaxed. The third finger may assist the fourth, and should be used on a note underneath the previous note on the same fret but on a lower string. For instance, play the following pattern:



Notice how the use of the third finger makes the pattern flow better. Also, the third finger may be a substitute for the fourth in the higher register. To strengthen each finger individually, I found two exercises which help:

1. Press equally hard with thumb against index finger several times. Then second finger with the thumb, and so on. Pressing against a tennis ball is also good. Remember, only one finger at a time—you already have the natural "brute" hand strength you need. Strong index finger *dexterity* is what you're after now.

2. Close your fingers into a fist, pointing your thumb out and away from the rest of your hand. Now, without raising any other fingers, raise fingers 1 and 3 together (this is a "toughie" and if you get the third finger up even a little, you're doing fine—it'll improve with practice), put them down in the closed position and then raise fingers 2 and 4 together. This exercise is also good for your concentration habit—take it easy at first. You'll have fun pulling it on your friends once you get accomplished at it. No fair cheating by holding your fingers down. This is a test I would give potential guitar students years ago, to see if they had coordination and concentration powers.

Guitar fingering (one finger per fret 1-2-3-4) is good only on small necks and scale-type patterns or jazz-type bebop solo work. The idea of the left hand is to keep it totally in a relaxed state at all times with the thumb as your pivot home base (or anchor). Most players almost give me a heart attack when I see them hooking their left thumb over the neck as if to hang onto it—think how much more speed they would have if they only knew!

Carol Kaye

BASS FINGERING TECHNIQUES

About five years after I started playing the bass, I began to teach. My first students had been playing as long as I had, but wanted to learn about walking bass lines in jazz applications. Their problem was their lack of knowledge of the major scales; none of my students could play them 100% perfectly, and so they couldn't figure out chords in an accurate manner.

After teaching for a while, I found that I was going to have to learn several ways to explain music fundamentals in order to make things super-clear to the students. I started checking through a lot of music theory and harmony books in order to get my material together, and I also incorporated physical techniques that some excellent teachers had introduced to me. When physical problems (such as poor fingering technique) are corrected, a bassist can play easier and with a more organized conception of note location when sight-reading.

In the last 20 years I have taught a large variety of bass players from 8 to 51 years old. Here are some observations I've made in that time: About 90% of the students playing electric bass are self-taught, and are barely able to read quarter notes, even after five years on the instrument.

I would say that 95% of the people I see are struggling with guitar fingerings on the bass, and have no idea that there are other fingerings that are easier—especially for people with small and medium-size hands. Most of these people have memorized scales using certain fingering patterns that get them through the scales, but often they really don't know the names of each note they play. Consequently, this hangs up their reading.

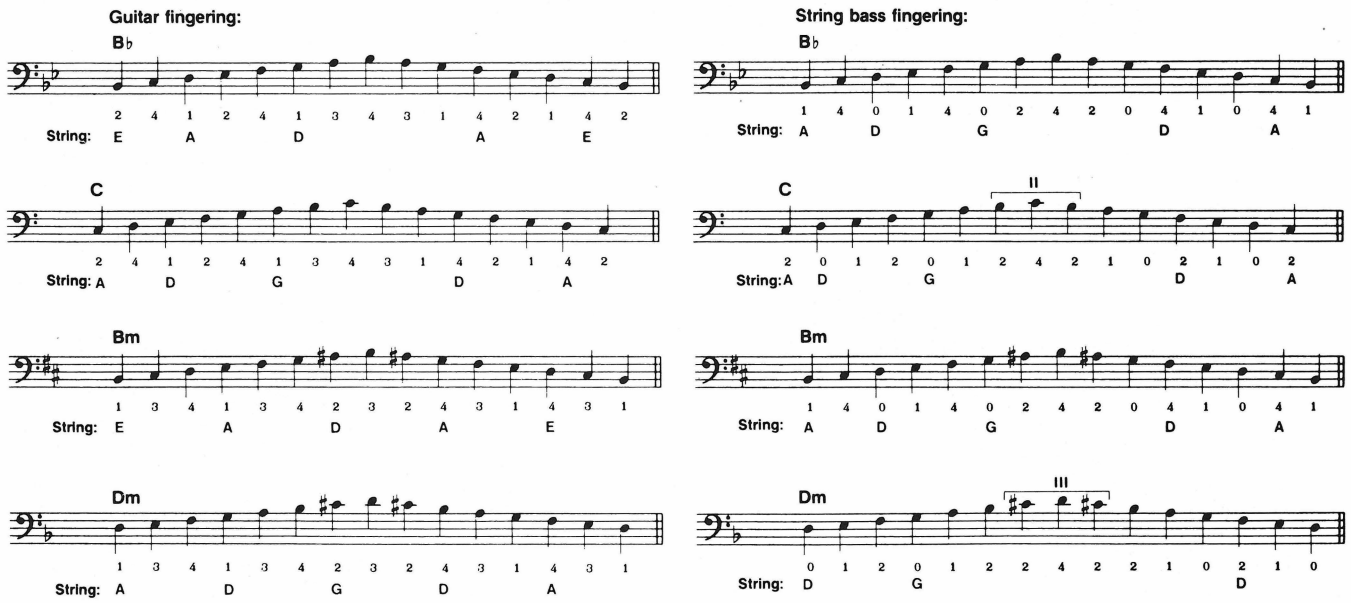
There is a fingering technique that I use to teach; and after teaching it to over 2,000 bass players I know that it really works. The *Simandl* fingering is a system designed for string bass and uses the 1st, 2nd, and 4th fingers. The 3rd (ring) finger is not used independently in the low positions. For example, when playing a note with the 2nd finger, both the 1st and 2nd fingers are down on the string. When playing a note with the 4th finger, all four fingers are down on the string. This fingering covers three frets per position, instead of four—eliminating the stress of the four-finger stretch inherent to guitar fingering.

I feel this fingering works better for most people for three reasons: (1) The strings on an electric bass are thicker than those found on a guitar, and require more effort to push down; (2) the frets on a long-scale bass are farther apart than those on a guitar, and therefore the Simandl fingering will not be as strenuous as the four-finger guitar fingering; and (3) an electric bass' strings are farther apart than a guitar's.

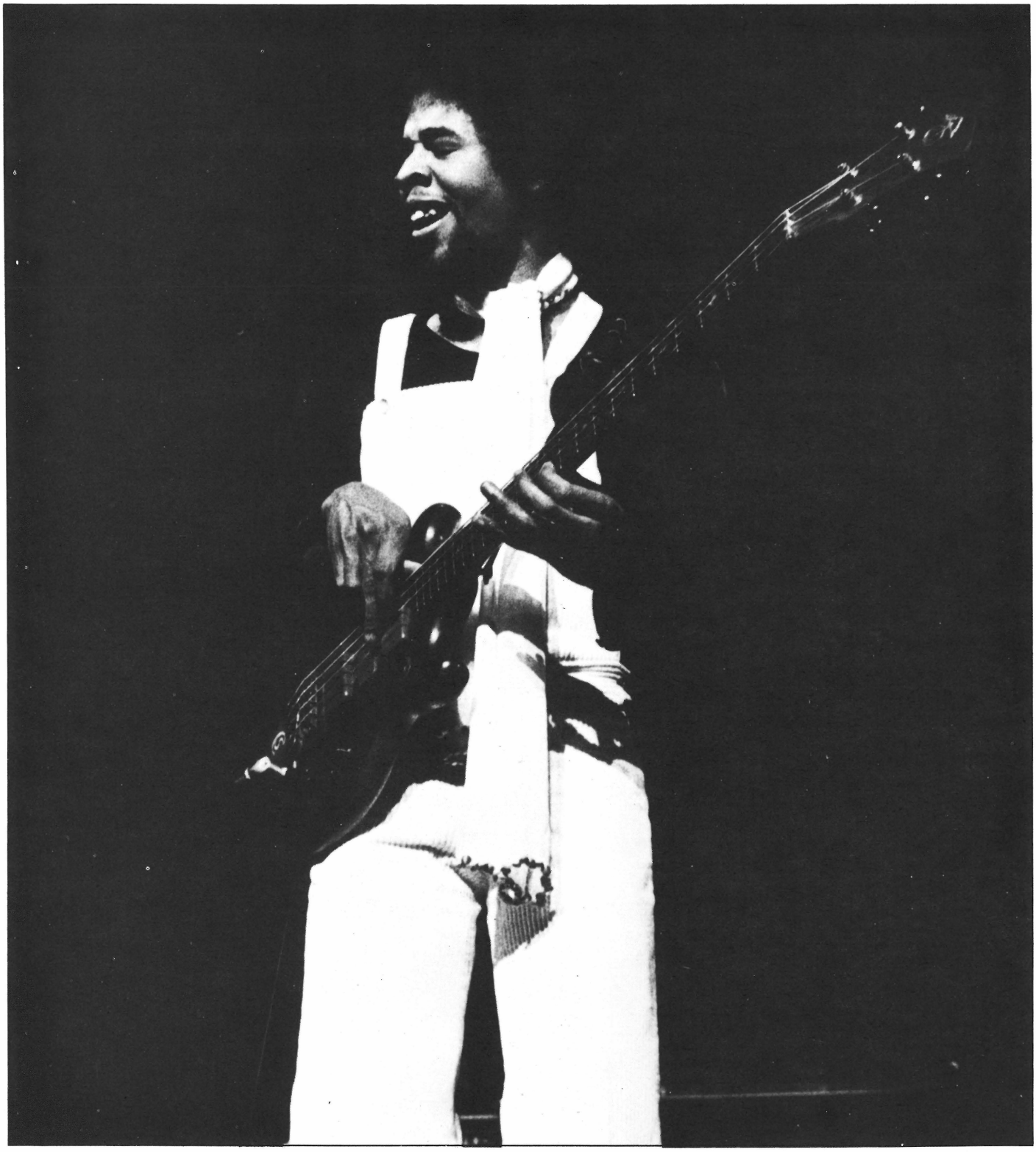
A studio player generally must read without looking at his or her left hand, and the Simandl fingering system facilitates this. I have included below a few examples of scales comparing guitar-style and bass fingerings. Remember the following points, and you'll be playing the easiest way:

1. Keep a big space between the 1st and 2nd fingers; don't let the knuckles touch.
2. Keep the fingers curved—don't let the 2nd finger collapse.
3. Use your thumb as a pivot when going over to the low strings from the high strings (your elbows come forward, too). This helps to keep your fingers curved, and prevents flat-finger grabbing.
4. Practice in front of a mirror, so you can see your hand.
5. Don't take your hand off the neck when playing an open string.
6. Keep the 1st finger down when playing a note with your 2nd finger. Keep all four fingers down when playing a 4th-finger note.

Herb Mickman



1 = 1st finger down on string
2 = 1st and 2nd fingers down on string
3 = 1st, 2nd, and 3rd fingers down on string
4 = 1st, 2nd, 3rd, and 4th fingers down on string
(notes under bracket are played within one position)



6. SOLOING

SOLOING

Playing solos on the bass, meaning taking the role of a lead-type player in a musical situation, is a very interesting subject. I am asked quite frequently about it, so I thought I would start this discussion by giving some of my ideas on lead playing.

The first thing I must do is explain the basic role of a bass player (one who plays usually a bass viol or an electric bass guitar). Just knowing the meaning of the word "bass" as defined in Webster's Dictionary—"an instrument of the lowest range"—it is very obvious that the first, most important thing for a bass player to remember is that since his sound is of the lowest range, naturally he would have to handle that area in the music being dealt with. I know that sounds very simple, but it is very true.

Next in the role of a bassist is what he does with that sound. Now what is usually done, and what's been going on for as long as I can remember, is that the bass player is one who acts as a harmonic stabilizer as well as a stabilizer of rhythm. In other words, if a bassist is playing a song that has three chords that repeat one after the other, each getting beat—something like a *C* chord to an *F* chord to a *G* chord, etc.—the way to apply this idea of the bass' role is to play the roots of the chords *C, F,* and *G*. And at the same time the bass player plays each one of those roots on every beat it appears. Amazing, isn't it?

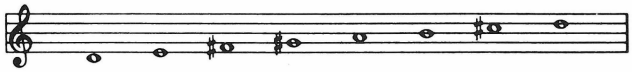
Of course, this can be altered to suit anyone's own particular taste—i.e. one could extend the range of the instrument by adding extra strings (which allow for a higher range to work with) or by playing notes other than the roots of chords, and so on. The possibilities are endless; however, I must stress that anyone who really wants to become a good bassist should have some idea of the role that goes along with the instrument. All the great bass players I've listened to extensively have had this "knowingness"— musicians such as Paul Chambers, Scott LaFaro, Richard Davis, Charles Mingus, Billy Cox, Noel Redding, Ron Carter, just to name a few.

I could go on forever about the role of the bass player, but this is enough for what we are going to cover here. How this fits into soloing as a bassist is very simple. If a bass player is using an electric, and he is playing with, let's say, an electric piano, electric guitar, and drum, I've found it wise to alter the bass sound a bit for soloing (especially with these other instruments). Maybe make it "brighter" for the solos and then come back to the normal sound for ensemble playing. I've found that this helps me enormously when I'm peforming or recording. The problem that this overcomes is one of clashing timbres when, for instance, the timbre of the bass drum is directly in the range of the bass' timbre. All you need do to handle this is change the timbre of one of the two sounds. You'd be amazed at the difference just a very slight change will make.

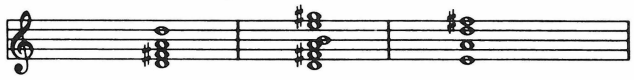
As far as actual playing is concerned, if a bass player wants to feel comfortable soloing he should familiarize himself with whatever music he's going to be dealing with. If you are going to solo in a song that has chord changes like one bar of *A* minor to one bar of a *D7* to two bars of *G* minor, you'd better know something about those chords—what the notes are in the chords, what scales can be played from these chords.

Even more important is getting the overall feeling of the song. This can be accomplished by maybe playing the melody, or just simply listening to the song as a whole to get the concept of it, so you can have something to work off. When I was practicing a lot what I used to do to strengthen my improvising ability was sit down at the piano and play chords, write them down on paper or maybe just remember them, and make little exercises using the scales I knew were related to the chords. This sort of thing can also be done in almost the opposite way—I would get a scale I liked (and, boy, some of those scales were weird), then find the chords that would go along with the scale, and I'd write songs that way. For example:

Scale (D lydian mode)



Possible chords Dmaj Emaj/Dmaj Dmaj/E



A very important factor in all this is getting yourself to the point where you can *apply* this sort of stuff. Any piece of technical information is not fully understood in its fullest sense until it can be applied. Meaning: a person could remember all the notes of all the chords and scales in his head, and that's about as far as those scales and chords would go unless the musician applied them by playing and practicing and working with them until he could play them inside-out.

I used to sit down and listen to a lot of John Coltrane records and try to figure out what he was doing. I remember one song called "Out Of This World" [*The John Coltrane Quartet*, Impulse, 21] that was basically a very simple song with only a few chords to it. But I could never figure out how John could play so much stuff even within just one chord. So I listened and listened and finally came to the understanding that basically he was dealing with about eight notes related to the chord, and he was taking these eight notes and doing everything possible with them, playing them all in different sequences, and at the same time (underneath it all) making everything sound very melodic, and comprehensive to me. When I finally understood what he was doing, I applied what I had found, used it, and came up with all sorts of ways to play off the scales and chords in this song.

I have noticed that when a bassist has a very good grasp of the music he is playing—being able to play at at will any way he wishes to—he can create the greatest bass lines, can play the most creative solos, and is usually very happy about it. And the other musicians he is playing with are usually very happy, too.

Stanley Clarke

GOOD SOLOS REQUIRE MORE THAN SPEED

An interesting thing is beginning to happen to bass players. Have you noticed that these seem to be the days of emerging equality? People everywhere are standing up to demand equal rights within the world community (this includes Butte, Montana, by the wày). Everybody, it seems, wants a piece of the cake. Well, get this: Bass players are starting to take note of their positions as sideman and are standing up to demand "equal solo time."

The bass is becoming much more audible on many records, and it's certainly more up-front on live gigs. I predict there will be organized marches down Fifth Avenue replete with marchers holding aloft protest signs saying, "How Low Do You Think We Are?" or the ever-popular "Go Funk Yourselves." Oh, yeah! Things are going to look mighty sweet for all those young bass Turks whose fingers move with the speed of humming-birds' wings.

Now the bad news. How many times have you played at a rehearsal or gig, and the bandleader turned to you and said, "Hey, Nunzio, will you quit playing so many damn bass notes and play the part?" These are the days when bassists armed to the teeth with new vital musical statistics generously supplied by the latest fusion records will attempt to play their entire repertoire of bass information inside three sets of "Evil Ways" and "Louie Louie." The reason that young bassists insist on playing so fast these days is simply because of the few individuals who have made names for themselves by playing so quickly. Without realizing what their favorite player has studied, listened to, or practiced in order to develop such facility, many listeners have simply latched onto the fact that their heroes play faster than Mario Andretti taking the north turn.

"Busy" bass players draw on information which has been available for about ten years (roughly since Stanley Clarke was first widely heard). If you check, you'll see that there aren't enough strong soloing bassists in the world. I hope that soon there'll be more. Horn players have over 40 years of diverse musical styles and albums to listen to. In fact, every decade from 1940 on has produced many influential horn, piano, and percussion personalities, each of whom has demonstrated his own special kind of soloing and general playing style. If you take your left hand and count the number of *truly* innovative solo and comping-style bassists, you should have enough fingers left over to dunk your doughnut with.

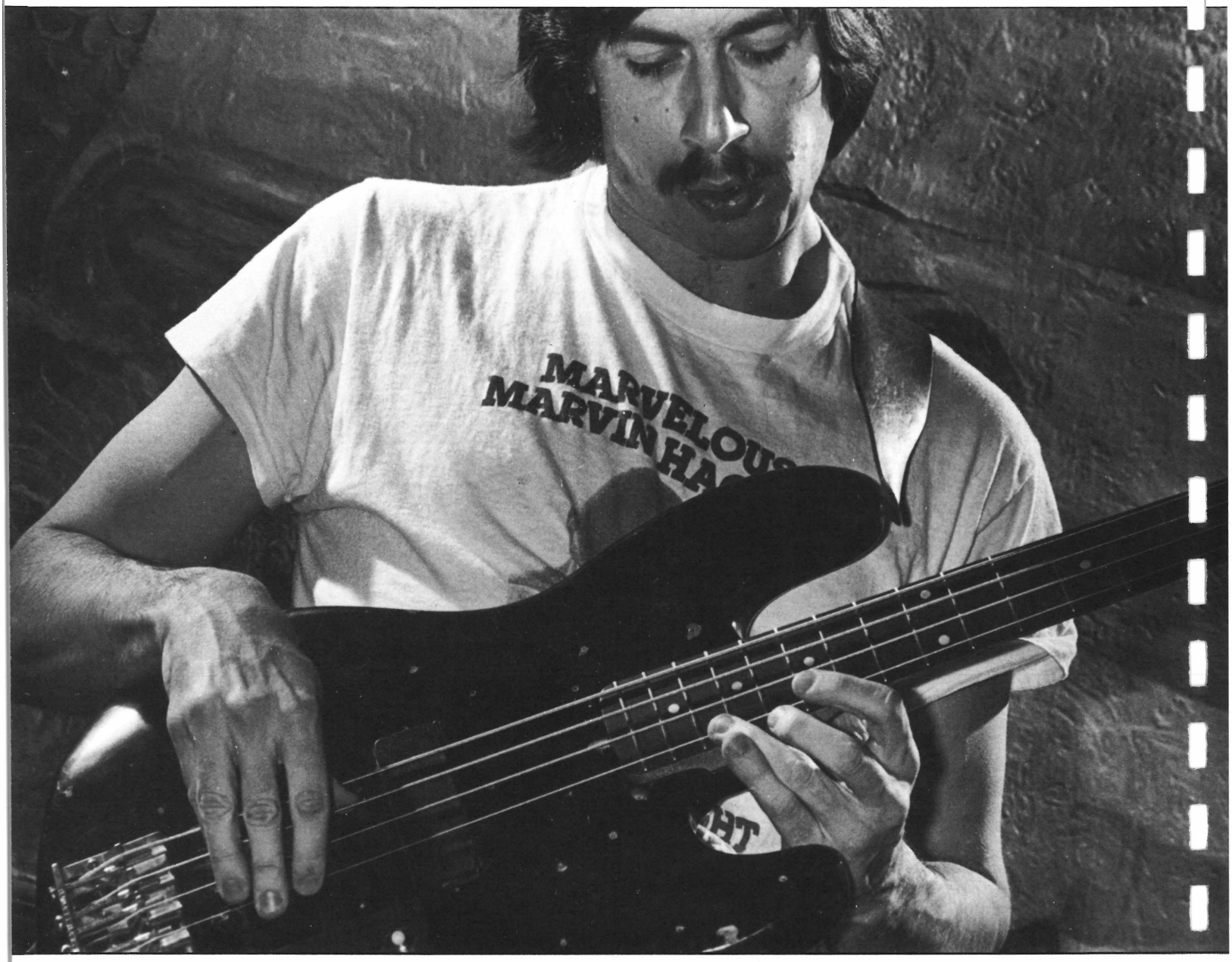
We are playing an instrument whose prime developmental period is now. And that's where part of the problem lies. The new freedom that bass players are enjoying is sort of like someone with a Porsche 931: "I'll tell ya, Arthur, this car of yours sure can move, but that red light is only 40 feet away and we're doing 190 miles per hour. Don't you think you should step on the brake?" A lot of guys aren't aware that by themselves chops can be a disrupting factor within the rhythm section. Without using space, dynamics, and a proper selection of notes, their function as bass players hasn't been fulfilled. The overall ensemble sound is disrupted and the impact of the bass solo itself is diminished because they've been playing Paganinni for 30 minutes. It's scary. A lot of guys just don't know how to slow down.

What makes the well-known bassists with fast technique such good players? They have merely realized their natural inclination is towards the bass. To quote Dr. McCoy from one memorable *Star Trek* episode, "People on this planet live long because it's natural for them to." The machine gun bass players sound good when playing busy or fast because they've done it so long that it's natural for them to play that way. And don't forget that a lot of these guys have their harmony and theory down, so the notes they play will be technically correct. If you want to increase your playing ability, I think you should work on the logistics of music and apply them to bass.

So here's your homework: Get a book of jazz tunes and transpose the melodies into bass clef, and then practice them on your axe. There isn't a faster way to learn about notes than to write them down. Also, keep an open mind when listening to different types of music. You'd be amazed at all the different kinds of influences you can get when listening to music played by someone other than an electric bass player. There's no reason in the world that with a bit of practice and openmindedness you wouldn't develop into a modern bassist whose abilites would place him into the foreground of today's players—unless, of course, if you graduate from the Rocky Graziano School of Music.

Awright! Keep practicing, and I'll see you backstage at the next Ted Nugent concert.

Jeff Berlin



7. IMPROVISING

IMPROVISATIONS

"I love to read your patterns from your books, but how do I invent lines to use on the gig?"

This is a common question from many of my students. The process of learning how to improvise is almost intangible, so this is a subject easily overlooked when wading through techniques, patterns, scales, work situations, etc. Getting past using Roots and 5ths requires a little study, however, so that the player has a feeling of confidence in knowing what he (or she) is doing when taking those first steps.

First of all, knowing what notes to use with what chords must be practiced, i.e,: *C*^{7}—*C, E, G, B*♭, (*C—G—B*♭ being the most important); *C—C, E, G, A,* (*C—G—A* being the most important). Familiarize yourself with these notes in all keys. Then run a scale up and down, and actually hum with it so you can find the relationship of one note to another. Mix it up to test yourself, such as humming *C* to *F, B* to *G*, etc. utilizing different intervals until you can automatically play any note you hear in your head. This is *vital* for ear development when trying to find changes of new songs.

Next, run down some runs such as the stock bass lick, Root, 3rd, 4th, #4th, 5th to the Root (*C, E, F, F#, G, C*) in every key, and in every octave. Then run the back cycle of 5ths (many tunes are based on this simple chord change principle—"Call Me," "Bluesette," etc.). The cycle is: *C* to *F* to *B*♭ to *E*♭, *A*♭, *D*♭, *G*♭, *B, E, A, D, G, C*. You can change chords by utilizing the scale to go from one chord to another, *C—D—E* to F, *F—G—A*—B♭*b*, etc. (or down, *F—E*♭*—D—C—B*♭*b*). Normally, you will find back cycles of 5ths are the strongest attraction notes (or chords), so thoroughly acquaint yourself with these bass notes. Another chord pattern to learn is the old standby—Root to 6th to 2nd to the 5th—*C, A, D, G* ('Ice Cream Rock' changes—old fashioned but still needed for early ear training). The passing notes can be added for movement: C, *B, B*♭, *A—B, C,* D—*F, A,* G, G.

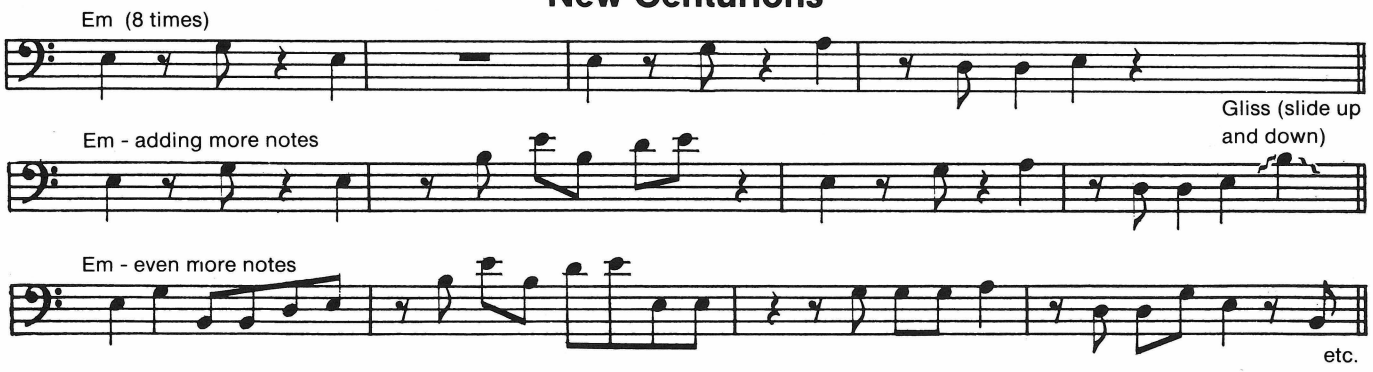
Now, you're ready to play with a group. Find out what key they are going to play in. Ask and run down some of the chord changes (try to memorize them at first—it's too hard to expect your ear to catch them at first—you're probably too nervous for that yet). Keep a simple rhythm pattern and try to keep good *even* time with the drummer (remember he'll rush in his fills and usually drag a little afterwards—go with him a little so there's no fight, but try to "smooth" out the time back to an even, driving pulse). Here's where you can put some bass lines to work that you picked up from records, books, or radio. Practicing with records is excellent for your feel and ideas.

Listen to the lead, *Don't Play Too Many Notes*—I know it's fun, but your job is to lay down a groove with spaces (musical holes) for the rest of the group to build on—you can show off on fills at the end of 4 or 8 bars. Keep a pattern (preferably a 2-bar pattern) going. You can stretch as you get used to the tune and chord changes and you'll get rhythm ideas from the guitarist, pianist, and drummer, but keep in touch with the main pattern as audiences (and the group you play with) can identify with it. If you play different patterns all the time, the mood of the tune will be destroyed. By leaving holes, you create excitement, give other players a place to shine, and then when you play a fill, you really come off like a 'monster.' Below is the pattern I used on the film *New Centurions.* Quincy Jones just ask the rhythm section to "jam" and he so wisely added the rest of the band later based on our inventiveness and this resulted in a complete movie score. After eight or nine times, I added a few more notes to the original pattern and after adding even more after five or six minutes, wound up by playing guitar-type chords boogaloo fashion in the "burning" part (for contrast in dynamics—to soften down, you can back down and make the bass line simple again like the beginning). Learn as many rhythm patterns as possible so you will have many ideas to draw from, depending on the "feel" of the tune.

Remember one thing, *all* of us started out just as you are doing—we didn't get there over night. Anything you hear another player doing—you *can* do—the notes are there on the instrument. Just take it step by step—don't worry what your competition is doing—copy, but incorporate it in your own style. Have fun, music is a love, you'll sparkle more when you relax and enjoy it too.

Carol Kaye

'New Centurions'

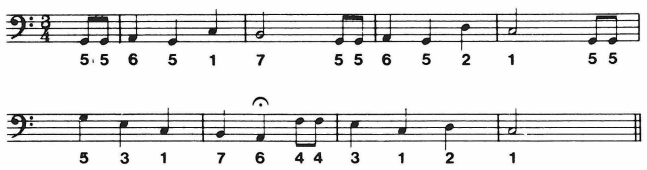


FIRST STEPS TO IMPROVISATION

A few months after I had begun to play my first job, I started to hear musicians voice their opinions of some of my bass-playing contemporaries. One piano player rated a particular bassist with, "He couldn't hear his way through 'Happy Birthday'!" Another bass player was praised: "This guy can really hear around the corner."

When I first heard the comments about the hearing ability of bass players, I started to wonder about where I was in their eyes (or ears). Despite the fact that I was learning lots of tunes with complex changes, my ears were not as good as I wanted them to be, and I decided to do something about it. That "something" was to exercise my "musical ears" by playing things in all 12 keys by ear. This process immediately revealed my weaknesses to me.

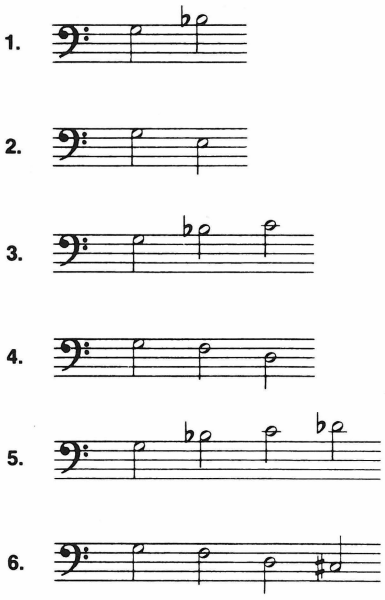
I started with "Happy Birthday." Here is the melody with the scale numbers listed under each note:



Playing in all 12 keys is easier if you think about the function number assigned for each note of a scale. This song is in the key of *C*, but it starts on the note *G* (which is represented by the numeral V, because it is the fifth scale step of the key).

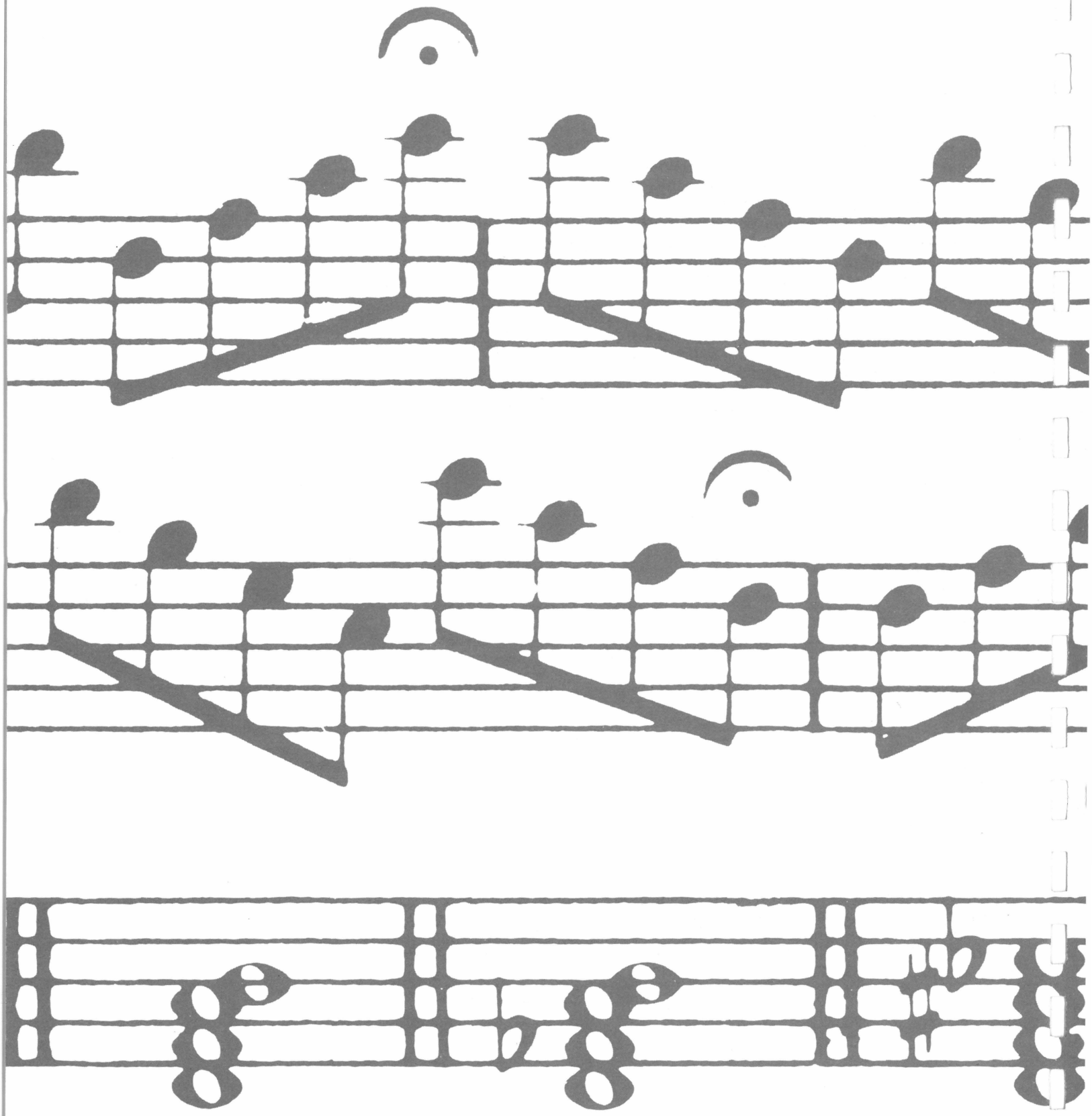
I would like to recommend a book of simple melodies for ear training and transcription called *Musicall*, by Richard Weber [Musical, Inc. (dist. by Cimino Publications, Inc, 479 Maple Ave., Westbury, Long Island, NY 11590]. It is inexpensive and has 39 melodies, such as "Twinkle Twinkle Little Star," "Jingle Bells," and "When The Saints Go Marching In." These tunes each have only six different notes in the melody. **Note:** Be sure to order the bass or cello version of the book.

Another important step towards better improvising is playing with a good concept of time. This means that you must play with a definite pulse. Most of us try to play too many notes when we first start to improvise, but here's a practice routine that will really help your understanding of improvisation. If you have a metronome, set it to =80. Then start to improvise on the two notes in line 1 below. Try to stay in tempo with the metronome, listening carefully as you play. Leave some space between notes and see how this will add to your improvising. Next try to improvise with the notes in lines 2. Line 3 and 4 are composed of three-note groups, and 5 and 6 contain four-note groups. be sure you are only playing the notes indicated, and try to get an exciting thing going with the pulse of the metronome. Really listen to it.



After you feel comfortable with each note group, try to improvise at a slightly faster tempo. Getting better at improvising will not take place in a few hours. After a few months of this kind of practice, though, you will feel and hear some good results. Play all of the examples I have shown in all 12 keys, and expand by finding some of your own.

Herb Mickman



8. PROGRESSIONS, PATTERNS, AND BASS LINES

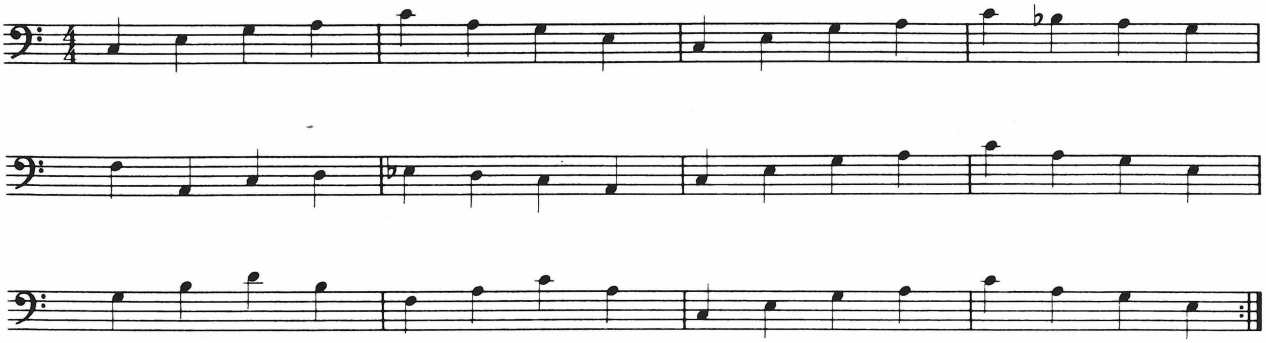
12-BAR BLUES PROGRESSIONS

Here are some very simple lines which can be very effective if played in a strictly blues concept, much like the Chicago-style blues of the Fifties. In essence, these are boogie woogie bass lines in the key of *C*. I prefer using the string bass when playing in this style, although you can use these progressions on electric as well.

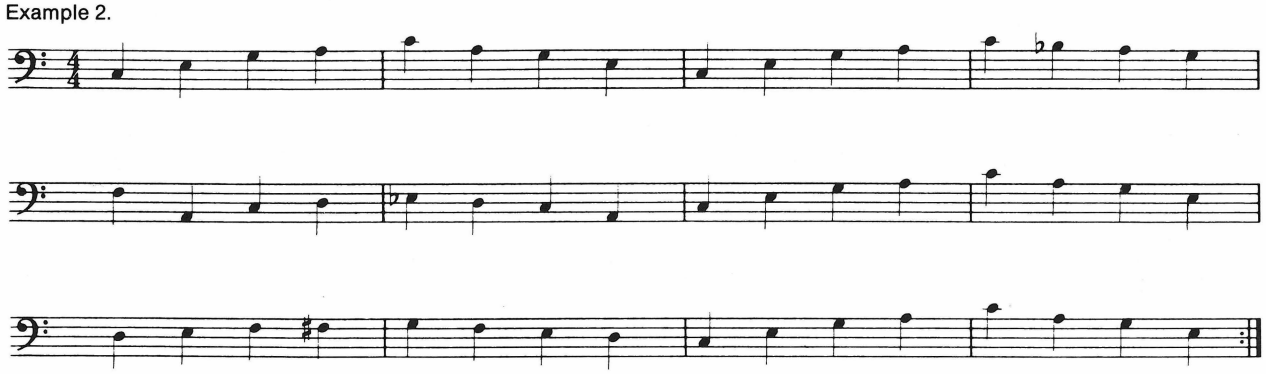
The first two progressions are exactly the same except for the turnaround at the ninth and tenth bars in Example 2. Whereas the turnaround in Example 1 is the basic V-IV-I, Example 2 goes II-V-I.

These can also be played with a shuffle feel (with dotted eighth notes) using the same notes, as illustrated in Example 3. Try playing in all keys just for the exercise.

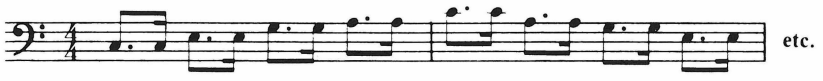
Example 1.



Example 2.



Example 3.



Here are some lines that offer more variation within the 12-bar framework. These types of lines were used on countless blues records in the late '40s and early '50s and are still used today by blues bassists.

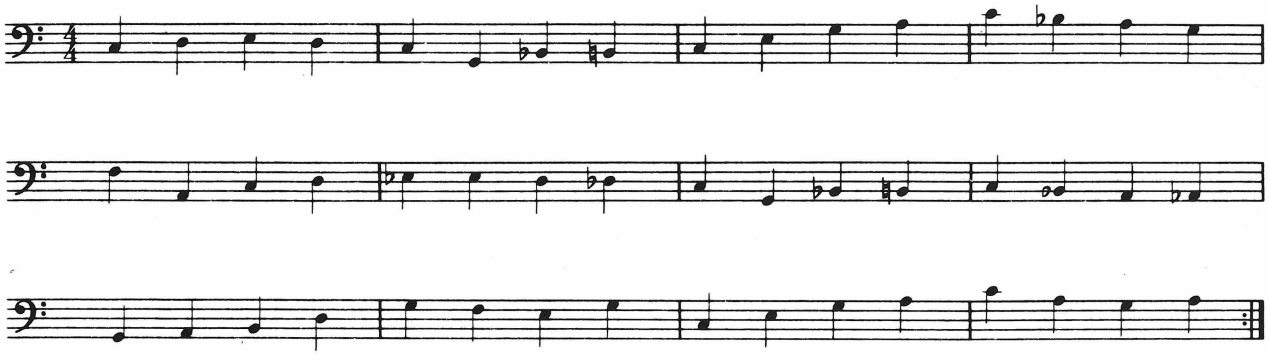
There is freedom to alter these lines or substitute one four-bar stanza from Ex. 5 for a stanza in Ex. 4 (or vice-versa). Also, you could play with a dotted eighth and sixteenth, "shuffle" feel, or mix dotted eighths and sixteenths with the quarter notes.

Both progressions here are standard I—IV—V 12-bar blues, with V—VI—I turnarounds. Example 2, using descending lines, would be played under 7th and 6th chords. The last measure of Example 1 would also be played underneath a 6th. In the sixth measure of Example 1, you could play *E*-natural, *Eb*, instead of *Eb, Eb* as written, though I wouldn't normally play it that way.

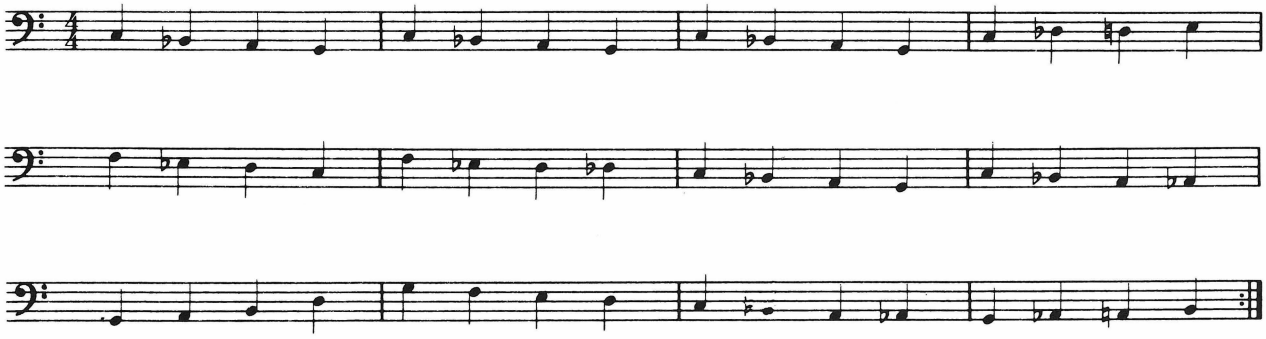
But the main thing to remember when playing blues is that it's an emotional form of music, so the most important thing to do as a bass player is flow with what you hear. The "rules" aren't as important as the feeling.

Larry Taylor

Example 4.



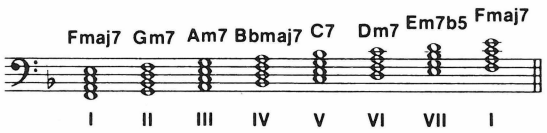
Example 5.



USING THE II-V-I PROGRESSION

Many years ago, when I had just started to improvise some melodies on my bass, I found that I had limited myself to very simple triads. One night, at my second jam session, the pianist called a tune entitled "What Is This Thing Called Love." I didn't know it, so he said, "It's just II-V-I in *F* minor, then II-V-I in *C*. The bridge is II-V-I in *B♭*, then *A♭7*, then II-V- in *C*." I couldn't comprehend what he said. When we had a break he explained that each note in the major scale has a corresponding Roman numeral—the first note is I, the 5th is V, etc. There are triads that can be built on these notes using only the notes in that major scale. Then he showed me what four-note chords look like when built on the scale notes.

Ex. 1 (below) shows the diatonic 7th chords in the key of *F*. Chords I and IV are major 7ths; II, III, and VI are minor 7ths; V is a dominant 7th, and chord VII is a half-diminished 7th (also known as a minor 7th with a lowered 5th, which is usually written as m7♭5).



One of the most common chord progressions is that of the Ii chord going to the V chord and then to the I chord, Study the chart below, which shows the chords used in the progression in all the common major keys:

Key	IIm7	V7	Imaj7
C	*Dm7*	*G7*	*Cmaj7*
C♯	*D♯m7*	*G♯7*	*C♯maj7*
D♭	*E♭m7*	*A♭7*	*D♭maj7*
D	*Em7*	*A7*	*Dmaj7*
E♯	*Fm7*	*B♭7*	*E♭maj7*
E	*F♯m7*	*B7*	*Emaj7*
F	*Gm7*	*C7*	*Fmaj7*
F♯	*G♯m7*	*C♯7*	*F♯maj7*
G♭	*A♭m7*	*D♭7*	*G♭maj7*
G	*Am7*	*D7*	*Gmaj7*
A♭	*B♭m7*	*E♭7*	*A♭maj7*
A	*Bm7*	*E7*	*Amaj7*
B♭	*Cm7*	*F7*	*B♭maj7*
B	*C♯m7*	*F♯7*	*Bmaj7*
C♭	*D♭m7*	*G♭7*	*C♭maj7*

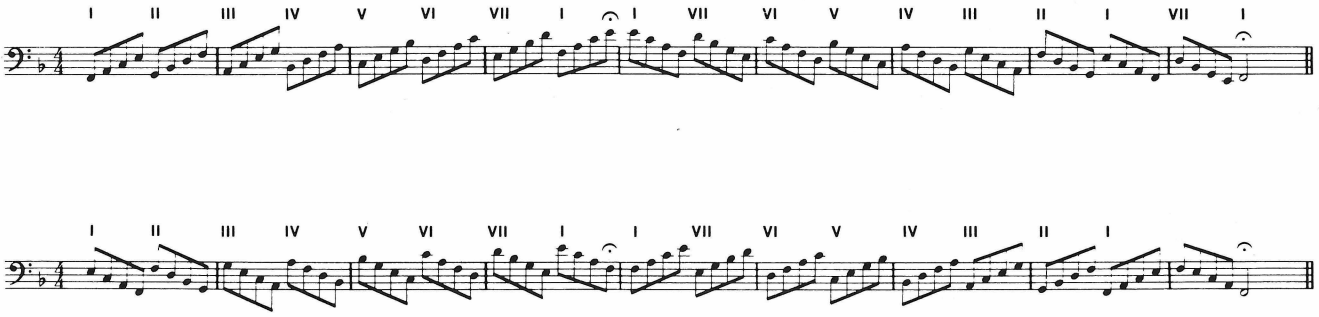
If your goal is to be a better improvisor, you will find the chart invaluable. The II-V-I progression establishes a new key no matter what key signature the song has. For example, if you see the *Am7, D7,* and *Gmaj7* (the II, V, and I in the key of *G*) in a song which is in the key of, say, *E♭* (or any other key), you are still in the key of *G*—from the first beat of the *Am7* through the last beat of the *Gmaj7*—regardless of the song's overall key. Here are a few principles that will help you recognize II-V-I progressions and their key centers in pieces of music that will come your way in everyday playing:

1. I chords are often major 7ths. In such cases you are in the key of the root of the major 7th chord.
2. V chords are often dominant 7ths. V's belong to the key of the I chord. Sometimes the key of I can be minor as well as major. For example *D7* is the V of both the *G* major and *G* minor keys.

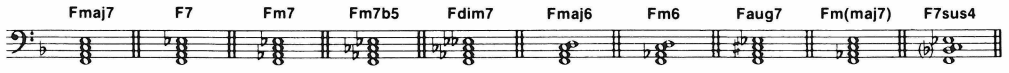
3. Many II chords are minor. 7ths or minor 7♭5ths. II's usually go to V chords.
4. A II-V progression can establish a key all by itself. For example, *Bm7* and *E7*, the II and V in the key of *A*, point to the key center—*A*.
5. In minor keys, the II chord could be either a minor 7♭5th or a minor 7th and would usually progress to the V (dominant 7th).

Playing the following patterns in all keys will really expand your chord and fingerboard knowledge:

Herb Mickmam



Memorize these types of four-note chords:



II-V-I WALKING BASS PATTERNS IN MINOR KEYS

Here are some variations of walking bass lines over a chord progression called the II-V-I in harmonic minor keys. In order to clarify the principles behind this and to help you understand the examples, I will first go over a few musical fundamentals.

Each note of the major scale is assigned a corresponding Roman numeral that indicates its scale step, or *degree*; see Ex. 1. If we build a series of four-note chords using *only* the notes contained in that scale, we get a group of *diatonic*, or scale-tone, 7th chords; see Ex. 2.

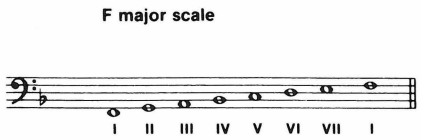
If you employ the idea of superimposed scale tones in a harmonic minor scale context, the result is similar to that in Ex. 3. If we build a series of diatonic triads on that scale, the results are like those in Ex. 4. In Ex. 5 we see the effects of building up four-note chords based upon a harmonic minor scale.

One of the most common chord progressions in minor keys (or in parts of songs that modulate to a minor key) is the II-V-I; see Ex. 6. In harmonic minor, the II chord is a half-diminished 7th (a minor 7th chord with a lowered 5th). The V is a dominant 7th, and the I chord is a minor/major 7th (a minor triad with a major 7th interval).

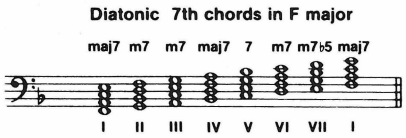
Now let's look at some different approaches to creating a walking bass line to use with these chords. Ex. 7 contains 20 bass lines that show how to maintain in the sound of the chord progression while playing a quarter-note pulse. Patterns A through E in Ex. 7 all include chordal tones, while F and G are based on scales. Parts H, I, and J employ only chord tones, while pattern K is more melodic and departs from the use of roots on the downbeats.

Herb Mickman

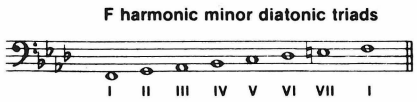
Example 1.



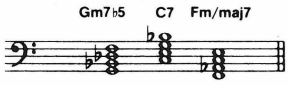
Example 2.



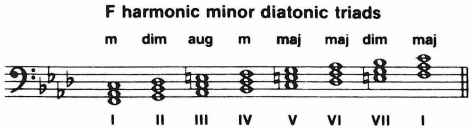
Example 3.



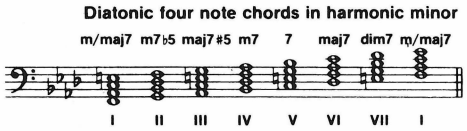
Example 4.



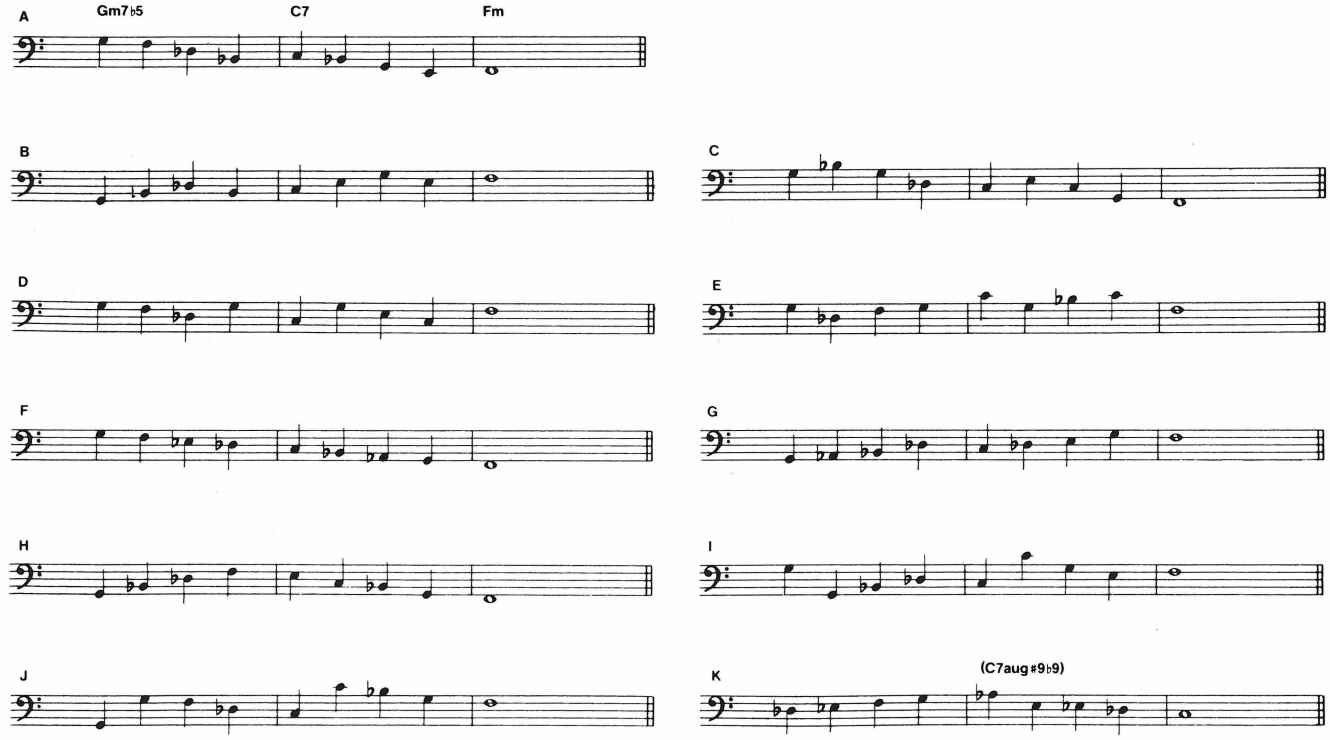
Example 5.



Example 6.



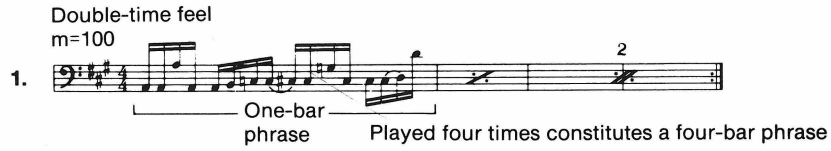
Example 7.



DEVELOPING & PHRASING BASS PATTERNS

Developing and phrasing bass patterns can be very interesting to a player in the woodshed. Woodshed is a term describing a musician's private study hours. Phrasing is how you individually interpret and play an idea. Many ideas come to a player's mind and only a planned format of study will allow those ideas to be retained for practical use in a musical environment.

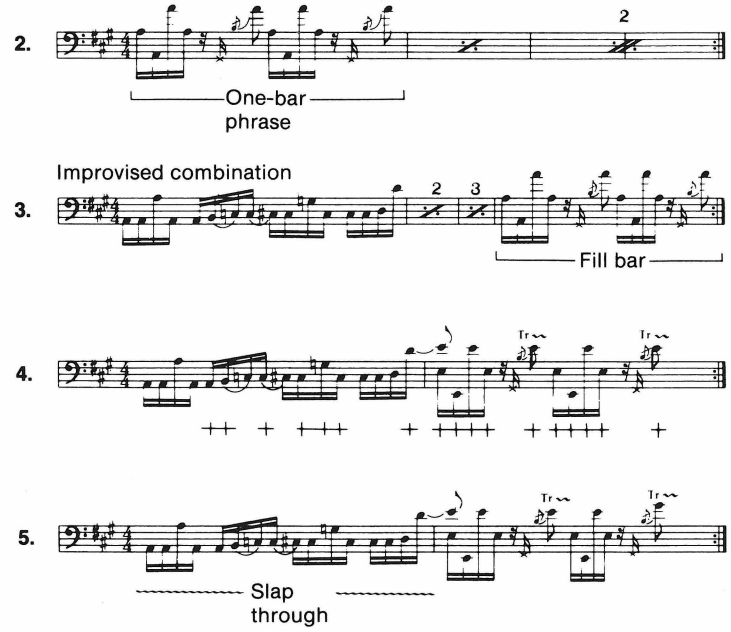
Every player should be as proficient at musically writing out his ideas as he is at playing them. Once your idea is written out you've retained it on paper and can see what it looks like; this enables you to tap your resources to make your own study aids, exercises, etc. For me, developing a pattern often starts with an idea that comes from what I'm hearing the rhythm section play. Ex. 1 is rhythmic and can be related to the total rhythm from the drum set and percussions.



Phrasing this pattern so it relates to an overall music feel calls for creativity through imagination. Phrasing allows you to make the soloist, singer, and other players musically comfortable and secure about where they are and where they are going in any piece of music. A well-phrased bass pattern enables the other players to contribute to the music without trying to help the bassist create or keep a groove,

The following examples of two- and four-bar figures are from rock and funk music; they respond to a double-time type of feel. Two methods help me play with a double-time feel; I double up on the footpats of a given meter; or I double the rhythm of my playing attitude, while maintaining a steady footpat of the written meter.

Chuck Rainey



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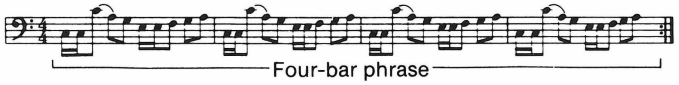
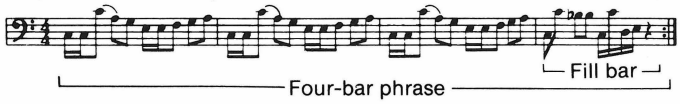


7.

Improvised combination

8.



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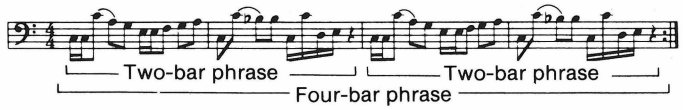
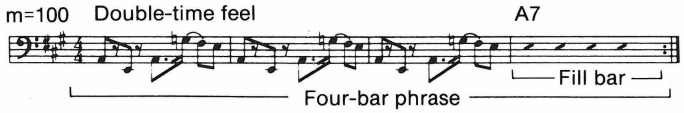


Use your ingenuity in developing the following examples into a pattern using phrasing. The fill bar can be used to develop and alter the idea.

10.



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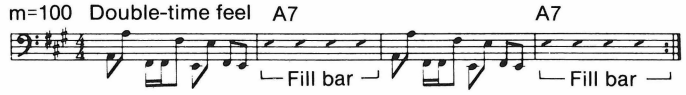


GETTING A BEBOP FEEL ON BASS

I first began to hear jazz music on the middle '50s, and I was amazed at the beautiful melodies of saxophonist Charlie Parker, trumpeter Dizzy Gillespie, pianist Bud Powell, and others. I was just starting to play the bass, and I imagined what it would be like to hear those melodies played by a bassist. Then one day my dream became reality: I played in a club opposite the late string bass great Oscar Pettiford.

He was leading his own small group, and he played many of the melodies in unison with the saxophonist. Oscar had an incredible ear, a great sense of time, and tremendous feeling. These things are something that you either have or don't have—you can't get them from a teacher. I was so much in awe of his talent, and he knew it as I asked him, "How do you play so well?" He said that it was important to learn melodies to develop your ear for better melodic ideas.

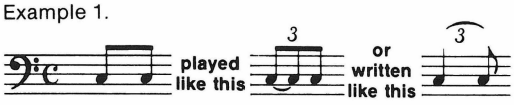
It took me about ten years to apply his advice, and I've been learning and playing melodies for about 12 years now. It has helped me tremendously, and I'd like to give you some insight into the phrasing of bebop.

There are two simple rules. The first is to play quarter notes short—just the opposite of when you play a walking bass line. This also applies to two tied eighth-notes that normally equal, a quarter note. Play them *detached*. The second rule is to play eighth-notes like eighth-note triplets with the first two notes tied (see Ex. 1). Ex. 2 shows this concept applied to the *C* major scale.

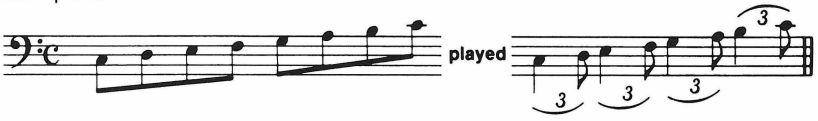
Some people may have a problem playing it right away, so I've set up a series of exercises just for their benefit. Play Ex. 3 in 12/8 time; Ex. 4 is essentially the same, with the first two notes tied together. Ex. 5 illustrates the same idea, except it is in 4/4. Ex. 6 is a variation of Ex. 5—none of the notes are repeated.

Once you've gotten through the first six examples, you'll find that Ex. 7 is a good pattern to work out in all 12 keys using the aforementioned phrasing concepts. Play groups of eighth-notes legato (smoothly and connected).

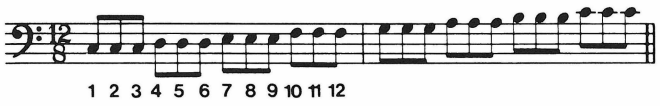
Example 1.



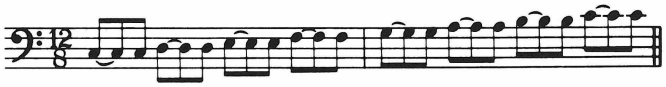
Example 2.



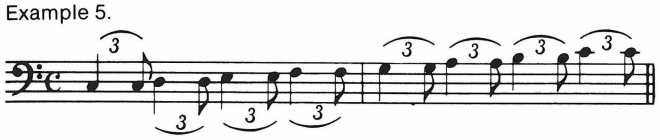
Example 3.



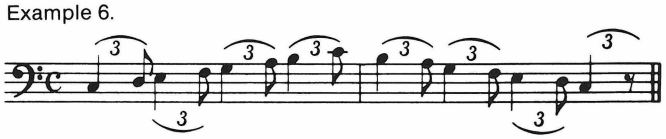
Example 4.



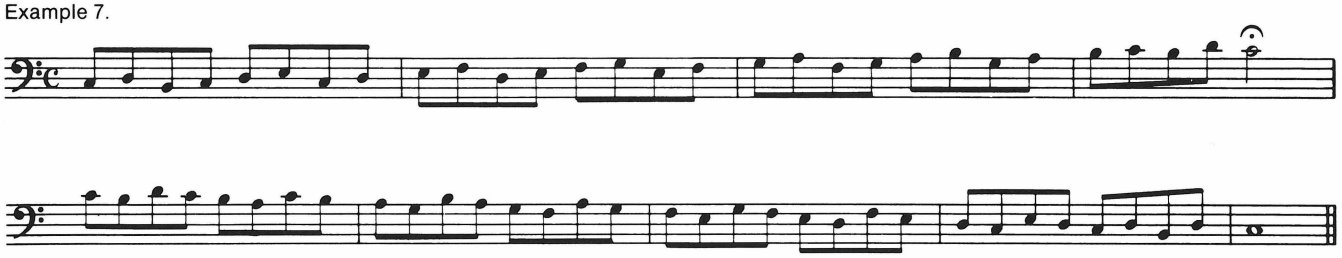
Example 5.



Example 6.



Example 7.



According to this approach, evenly written eighth-notes will be played as if they were part of an eighth-note triplet with the first two notes tied. Here is a melody by jazz pianist Billy Taylor that incorporates such bebop phrasings. First try to get all the notes evenly in tempo before trying to add the jazz phrasing. Then play with jazz phrasing, and eventually add the accents to give the melody more life.

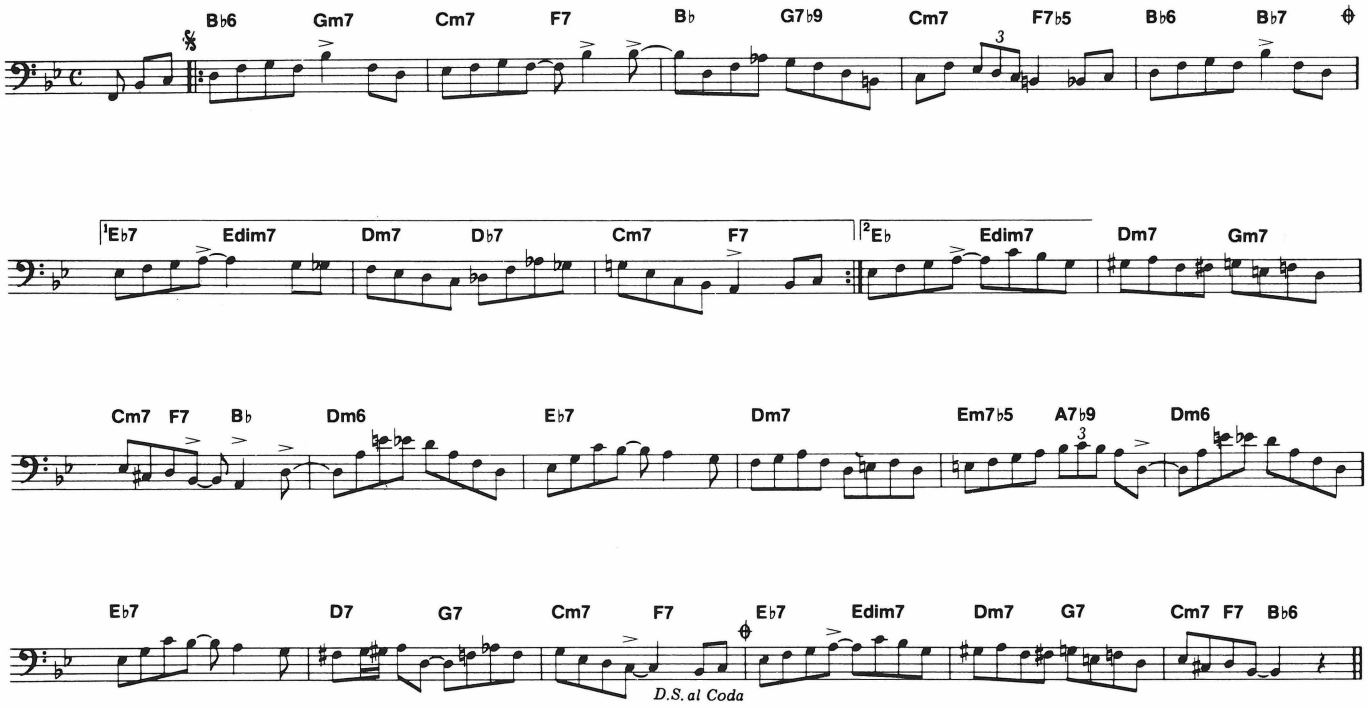
A good record on which to hear this song is *Blues Alley Jazz*, by George Shearing [Concord Jazz Records, JC 110]. The bassist, Brian Torff, plays the melody in unison with the piano. Being able to play this melody will set down a good foundation for solos over the chord changes. Have fun.

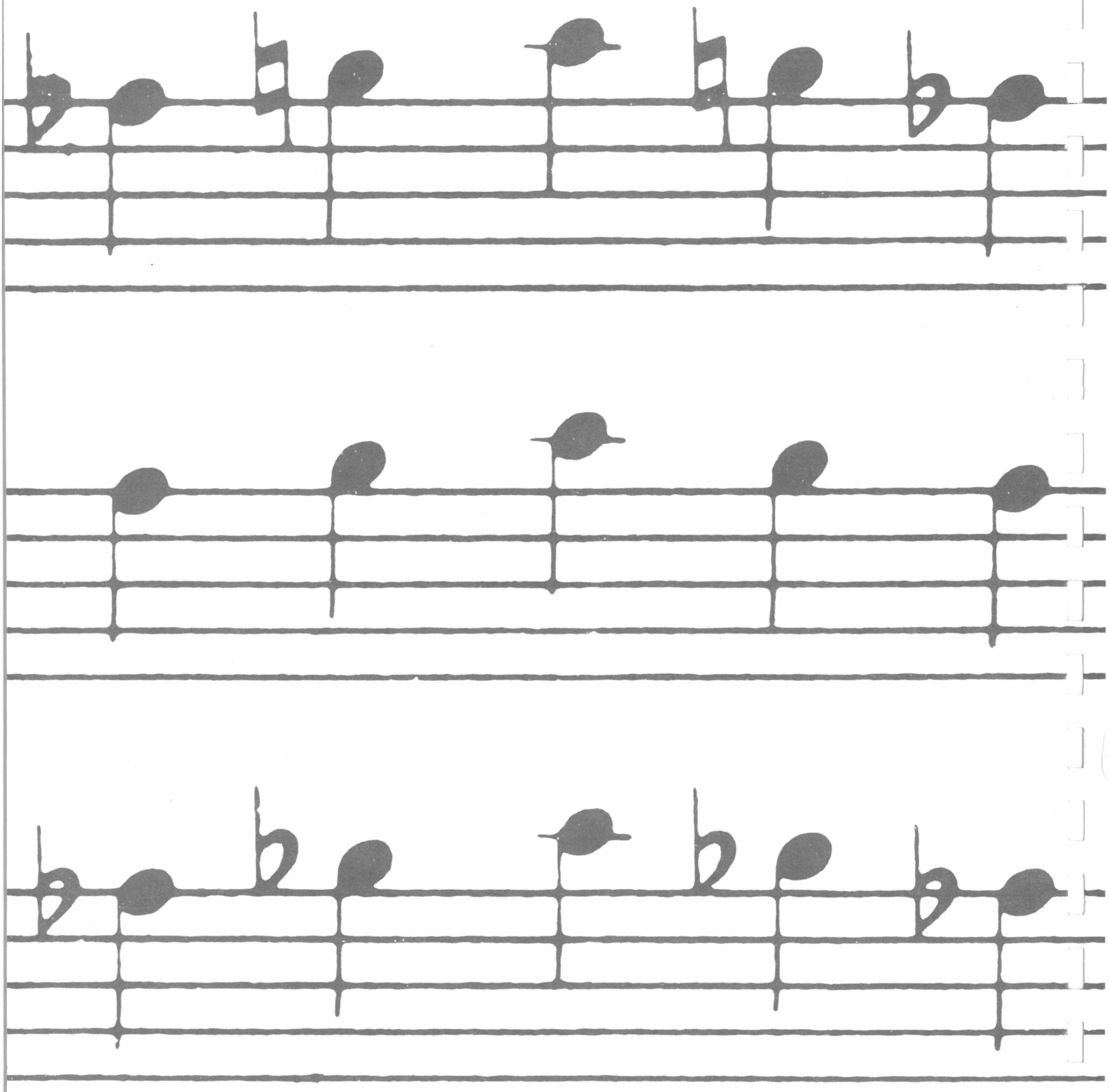
If you're interested in further explorations of bebop melodies, the books *All Bird, Miles Davis Originals,* and *Sonny Rollins Originals,* by Jamey Aebersold [1211 Aebersold Dr., New Albany, IN 47150], offer a great challenge and they're all written in the bass clef. They can be purchased separately or with a record containing rhythm section accompaniment.

Herb Mickman

'One For The Woofer'

By Billy Taylor

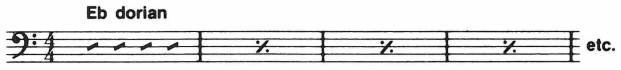




9. SCALES

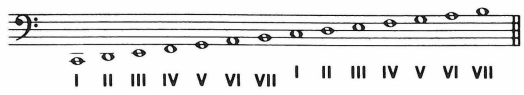
TYPES OF SCALES

Sooner or later, almost every bass player will be confronted with a chart that will call for some improvisations within a scale. Usually, this will be indicated in the following manner:



You will be expected to play an accompanying bass part that outlines the scale (and maintains the scale's feeling or sound). Needless to say, there are many scales to learn. It is even more important to practice them—one at a time—in all 12 keys. Take each one and memorize it, first covering one octave, then two.

At the end of this article is a list of the 15 most commonly used scales. Some of these are modal sequences, which are derived from the major scale. The modes are constructed by starting an eight-note sequence from the various notes in the major scale. In this case, each Roman numeral represents a step of the *C* major scale to start from:



I to I is the *C* ionian mode
II to II is the *D* dorian mode
III to III is the *E* phrygian mode
IV to IV is the *F* lydian mode
V to V is the *G* mixolydian mode
VI to VI is the *A* aeolian mode
VII to VII is the *B* locrian mode

Here are the various attributes of the scales and modes shown below: The major scale is used with major chords, as well as major 6th and major 7th chords. The dorian mode is generally applied to minor 7th chords (starting on the root): the phrygian is used on some minor 7th chords (starting on the root) and on major 7ths (starting on the 3rd). Major 7th and minor 7th chords can be flavored by using the lydian mode (start your bass line on the root); the mixolydian is useful on dominant 7th chords (again, start on the root of the chord).

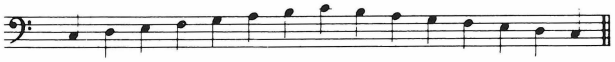
The aeolian mode (otherwise known as natural minor) can be used with minor and minor 7th chords; you should start on the root. You can use the harmonic minor scale with minor and minor major 7th chords, starting at the root; melodic minor can be used with minor and minor major 7th chords (starting at the root), and dominant 9#11 chords (starting on the 5th). The locrian mode is applicable to minor 7♭5th, or half-diminished, chords; start this mode on the chord's root. The whole-tone scale can used with augmented 7th chords (starting on the root, 3rd, or 5th). The blues scale can be used on major, minor, minor 7th, and dominant 7th chords; start this scale on the root of the chord.

The major pentatonic scale is generally used with a major, major 6th, or dominant 7th chord, starting from the root. Its counterpart, the minor pentatonic scale, can be used on minor, minor 7th, (starting at the root), and major 6th chords (starting at the 3rd). The diminished scale may be used with a diminished 7th chord (starting on the root, lowered 3rd,

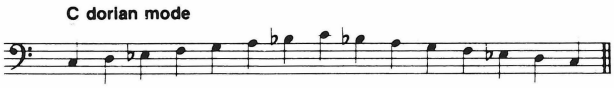
lowered 5th, or double-flatted 7th). It can also be employed with dominant 7♭9 chords (starting on the 3rd, 5th, lowered 7th, or lowered 9th), minor 7♭5th (half-diminished 7th) chords (starting on the root, lowered 3rd, or lowered 5th), and minor 7th chords, starting on the root or lowered 3rd.

Herb Mickman

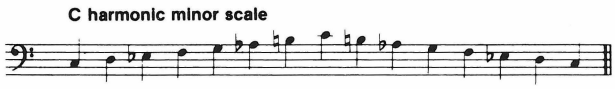
C ionian mode (major scale)



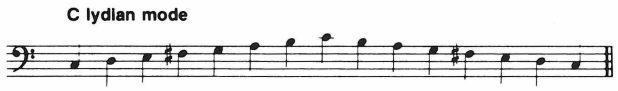
C dorian mode



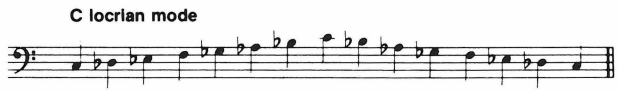
C harmonic minor scale



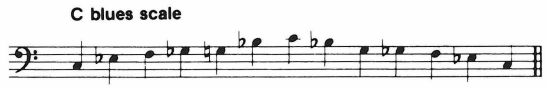
C lydian mode



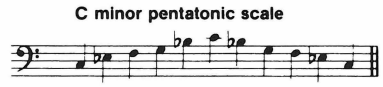
C locrian mode



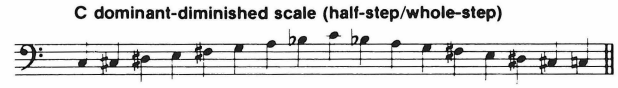
C blues scale



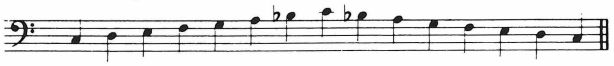
C minor pentatonic scale



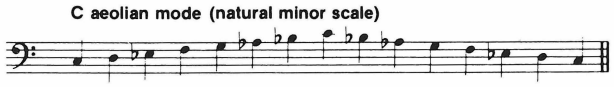
C dominant-diminished scale (half-step/whole-step)



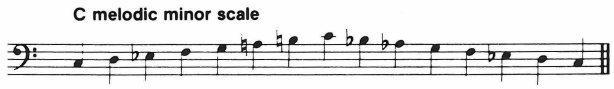
C mixolydian mode (dominant scale)



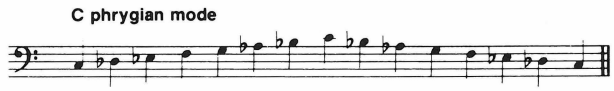
C aeolian mode (natural minor scale)



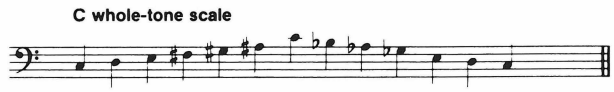
C melodic minor scale



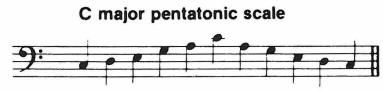
C phrygian mode



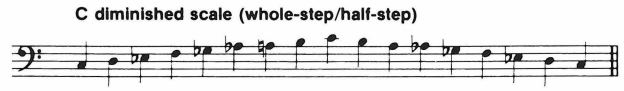
C whole-tone scale



C major pentatonic scale



C diminished scale (whole-step/half-step)



THE DIMINISHED SCALE

The first time I heard Ray Brown play bass was at the Newport Jazz Festival, around 1959. I had heard him several times on records, but the impact of hearing this jazz giant in person taught me a valuable lesson. It showed me how helpful it is to see *and* hear a player, rather than just hear him. I was able to pick up quite a few licks that day. The next time he came to town I knew a little bit more about what he was doing, and I managed to copy down what is shown in Ex. A.

Although I didn't get the rhythm accurately, I was able to get this unusual combination of notes and study it. I showed it to a pianist I knew who immediately told me it was a diminished scale. It is formed by alternating intervals of whole-steps and half-steps (see Ex. B). My pianist friend told me that jazz trumpeter Dizzy Gillespie was playing hip patterns on that scale back in 1947!

I was in love with the sound of the scale and began to practice it and construct patterns on it. After a while I could do all the patterns over a

two-octave range. Also, my ears began to open up and tell me where to use them. Here are the four chords that the scale works best with and the starting notes for each scale:

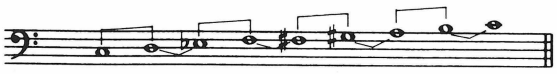
Chord Type	Starting Note
Minor 7th	Root or ♭3rd
Half-diminished 7th	Root, ♭3rd or, ♭5th
Diminished 7th	Root, ♭3rd, ♭5th, or ♭♭7th
Dominant 7th ♭9th	3rd, 5th, ♭7th, or ♭9th

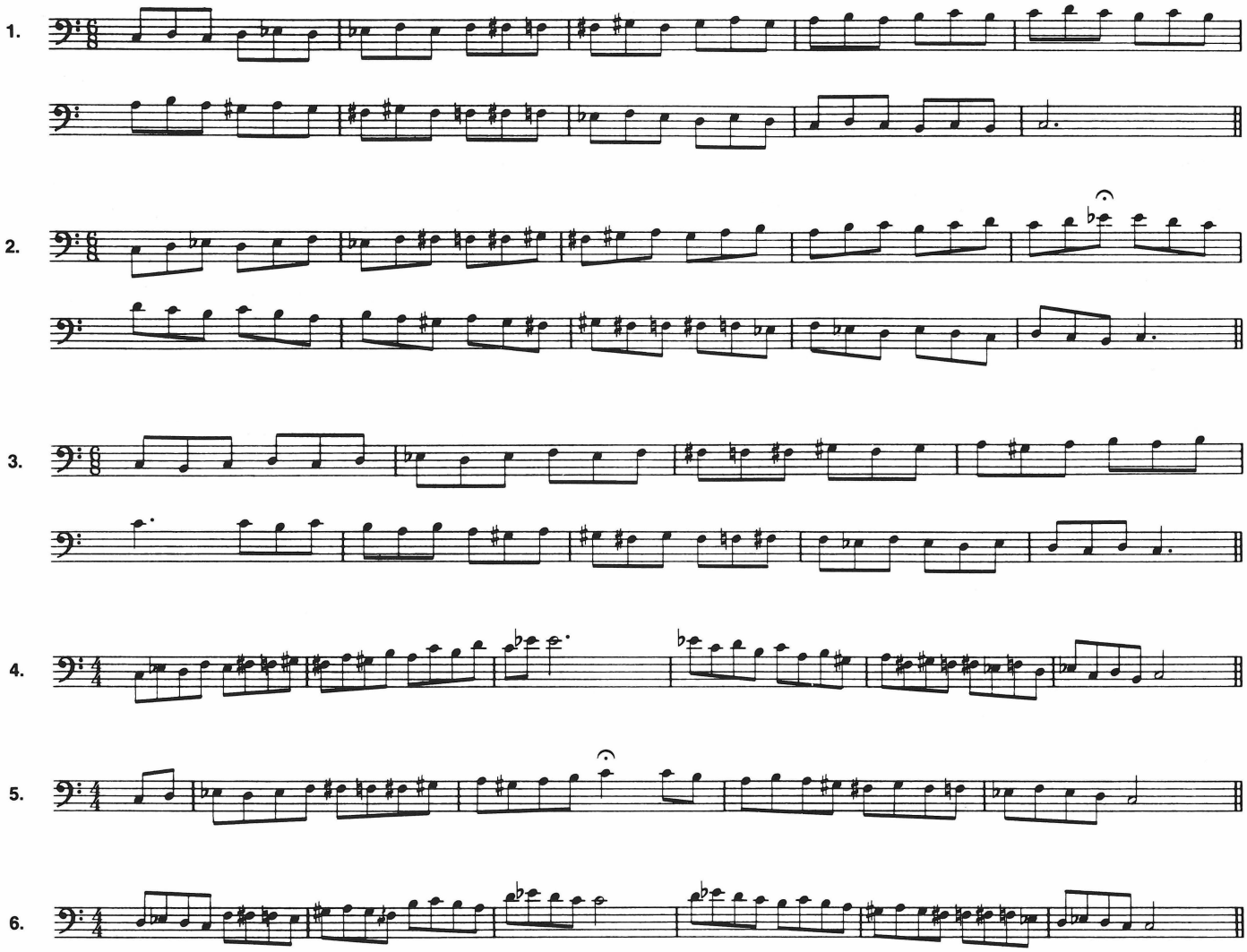
Here are several sequences. First master the basic scale (Ex. B). Play it until you have it perfect (one octave in all 12 keys), and then try each sequence in all keys.

Herb Mickman

Example A.

Example B.





THE MINOR PENTATONIC SCALE

The use of different types of scales for jazz improvisation goes back to the '40s, when musicians were feeling new influences of such musical giants as saxophonist Charlie Parker, trumpeter Dizzy Gillespie, pianists Bud Powell and Thelonious Monk, and others. Some of the scales that they brought to jazz soloing were the *diminished* and the *whole-tone* scales.

To gain facility with any scale requires a certain amount of practice and experimentation. I believe that doing a lot of musical calisthenics with a scale helps to get your ear used to the various intervals found within it. With enough practice you can sharpen your ear to the point where you are able to follow through on practically any idea you "hear" in your head.

Just running up and down scales in a solo context sounds corny and contrived to an experienced listener, so remember that a scale is just a group of notes that will give a certain sound over the chords utilized in a piece. And although the best improvisers use scales, they will vary them so that they don't sound mechanical.

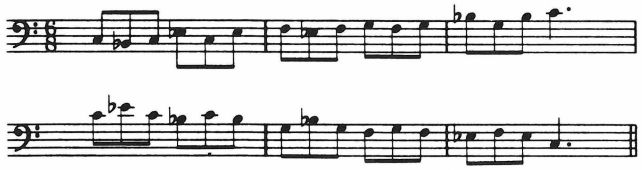
The minor pentatonic scale (Ex. 1) is one of the most common sounds employed in today's music. Just about every great improvisor has used it. And while some have used it consciously, many more play it simply by ear. The minor pentatonic scale can be used along with minor triads, minor 7th chords, and dominant 7th chords, starting on the root of each.

Play each of the patterns below in all 12 keys. Note that Ex. 5 has three additional rhythms, which will help break up the monotony of concentrating on scales.

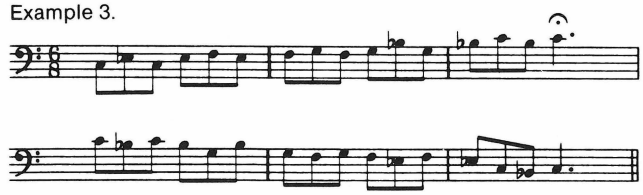
Herb Mickman

Example 1.

Example 2.

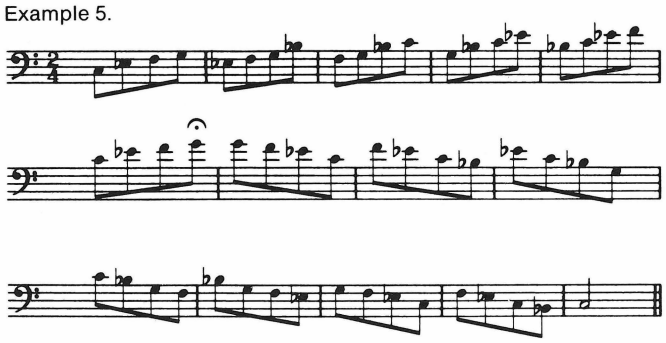


Example 3.

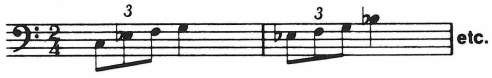


Example 4.

Example 5.

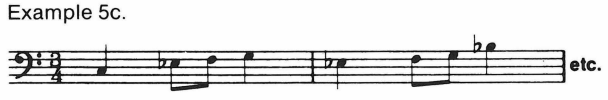


Example 5a.



Example 5b.

Example 5c.



THE WHOLE-TONE SCALE

Let's look at what some theorists call a symmetric scale—one that consists of the same interval pattern throughout. We will start with whole-tone intervals (see Ex. 1).

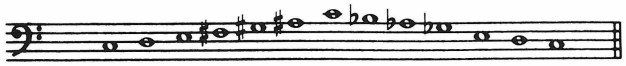
The whole-tone scale became popular in jazz improvisation in the late '40s, and some of the jazz licks shown in Ex. 2, 3, and 4, were typical of jazz's bebop era. The scale was used with two types of chords: the augmented triad (Ex. 5) and the augmented 7th, which is a dominant 7th chord with a raised 5th (Ex. 6).

To get the sound of the scale fixed in your ear, you will have to play it over and over many times, until you are certain that you're playing if right. After mastering it over one and then two octaves, start to do the sequences shown in Ex. 7, 8, 9, and 10. Play them in all 12 keys. Ex. 11 shows how chords can be constructed on each note of the scale; all the triads are augmented. (These chords are the basis for Ex. 2 and 12.)

Some of the piano giants who were using this scale were Bud Powell and Thelonious Monk. I would suggest checking out any of their records for some examples of the whole-tone sound. Familiarity with their whole-tone chordal and single-line structures can be a valuable tool for any bassist.

Herb Mickman

Example 1. **C whole tone scale**

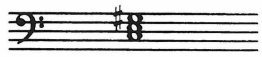


Example 2.

Example 3.

Example 4.

Example 5. **Caug**



Example 6. **Caug7**

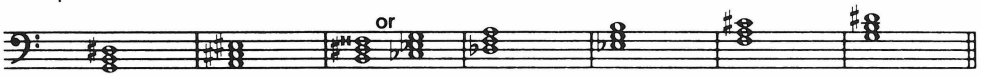
Example 7.

Example 8.

Example 9. **Thirds**

Example 10. **Reverse thirds**

Example 11.



Example 12.

ENCOUNTERING THE DORIAN MODE

Many years ago, when I was in high school, I took a harmony course, and through my studies I became aware of different types of scales. One day the teacher told us to place Roman numerals under each note of the major scale. It was explained that if you play all of the notes from I through VIII, or, in other words, I through I (say, *C* to *C*, or *D* to *D*, etc.), the result would be a major scale. There is a Greek name often associated with the major scale: the ionian mode (see Ex. 1).

We found that there were indeed other scales besides the major scale, and proceeding through it until that same note was reached one octave higher, we would be constructing a scale called the dorian mode (see Ex. 2). Whereas the major scale contains half-steps between its 3rd and 4th notes and 7th and 8th notes, the dorian mode has its half-steps located between the 2nd and 3rd notes and the 6th and 7th notes.

The basic concept of how the modes were constructed went in one ear and out the other until a few years later, when I heard a very impressive record called *Kind Of Blue* [Columbia, PC-8163] by trumpeter Miles Davis (with pianist Bill Evans and saxophonists John Coltrane and Cannonball Adderly). Throughout this album, the musicians were involved in improvisations based upon a scale, rather than chords. It turned out to be the dorian mode that they were working with, and since the '50s this mode has become a standard tool for nearly every jazz musician.

I realized that just knowing the scale's construction wasn't enough to really get it "in my ear," so I began to play the scale over two octaves and in sequences that covered all keys, starting in the lowest positions on the bass, working up.

Before we delve into the dorian mode exercises below, let me give you a guide to the fingerings I have written under each note:

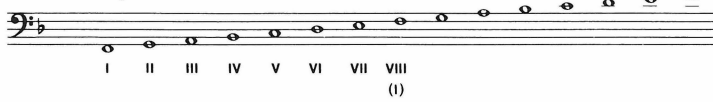
0 = open string
1 = 1st finger on the string
2 = 1st and 2nd fongers on the string
3 = 1st, 2nd and 3rd fingers on the string
4 = all four fingers on the string

It's important to keep each preceding finger down as you go to the next one; that is, from 1 to 2, from 2 to 3, etc. This helps to improve your tone, plus it makes your motions more efficient. For example, if you must go from the 4th finger to the 1st, you won't have to lift your 4th finger up and put your 1st finger down; rather, you simply lift the 2nd, 3rd, and 4th fingers in one motion, and leave the 1st in place.

Notice that brackets (⌐¬) are located above some sections of the exercises. All notes under a bracket are to be played in one position; that is, even though you change fingerings, your hand is poised at the same

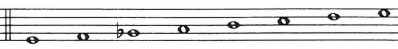
Example 1.

Major scale or ionian mode



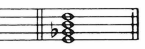
Example 2.

Dorian mode

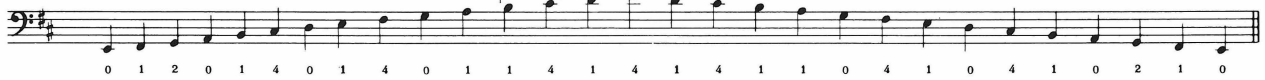


Example 3.

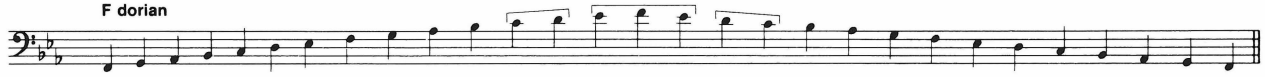
Gm7



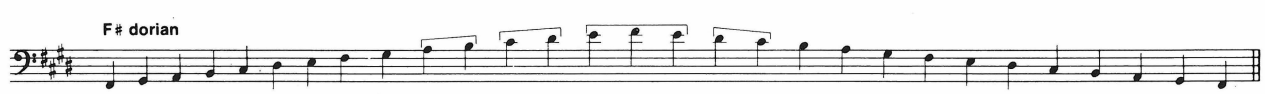
E dorian



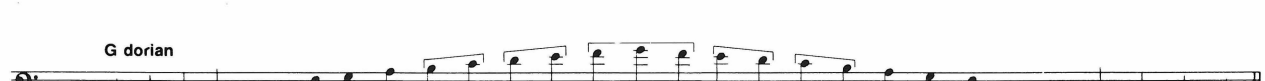
F dorian



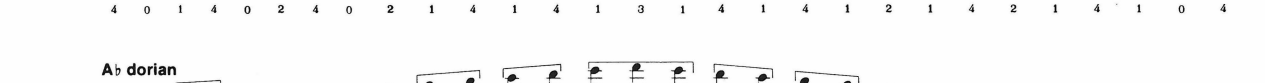
F♯ dorian



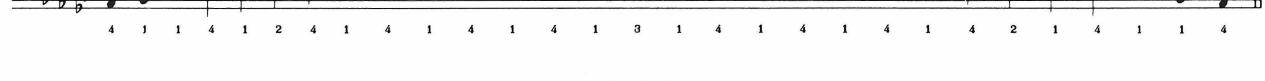
G dorian



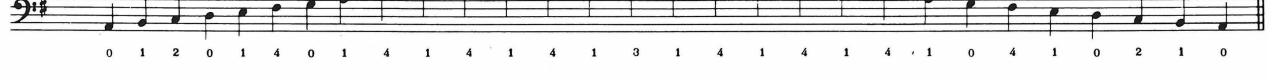
A♭ dorian



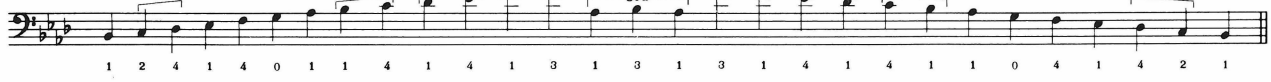
A dorian



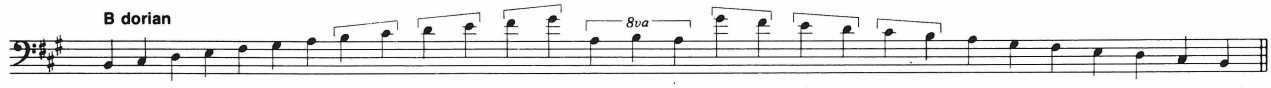
B♭ dorian



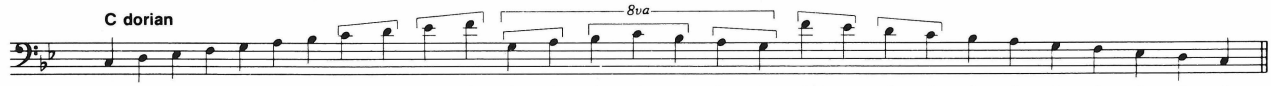
B dorian



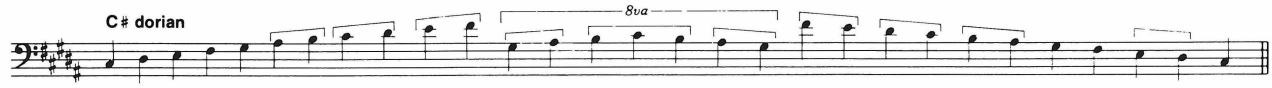
C dorian



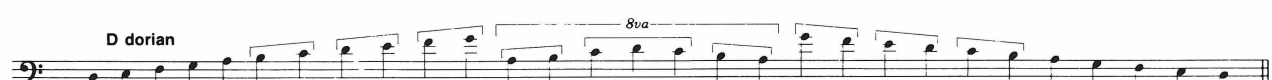
C♯ dorian

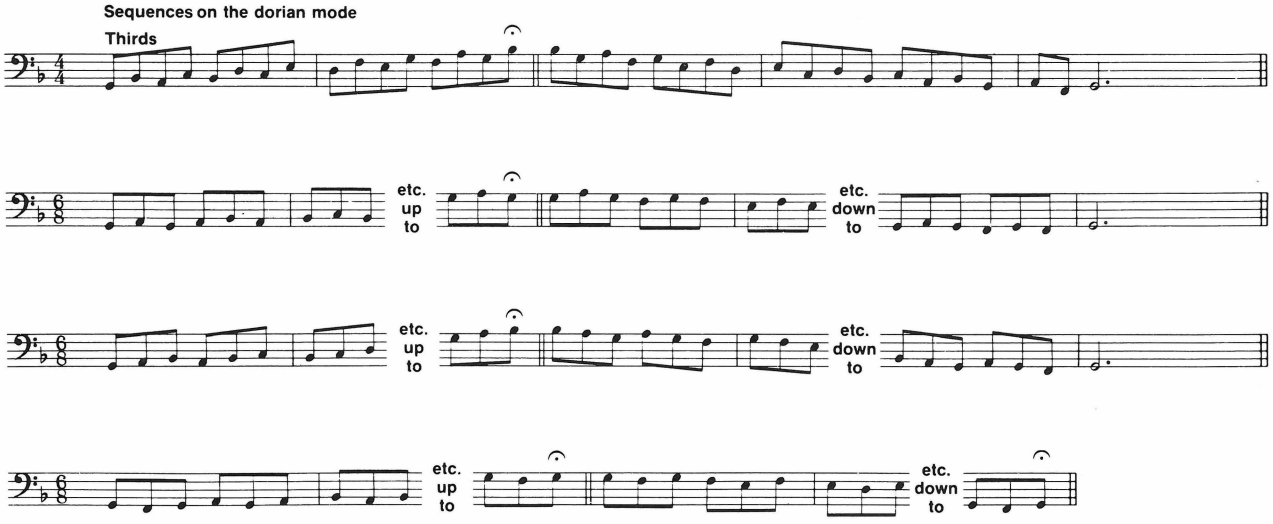


D dorian



E♭ dorian





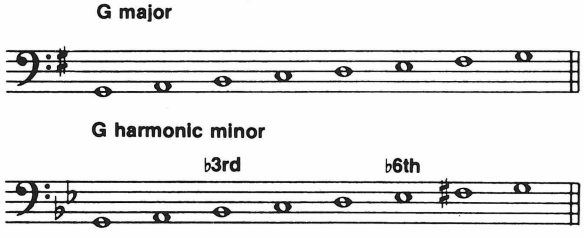
THE HARMONIC DORIAN SCALE

There has been a tremendous emphasis on the importance of scales and their uses in improvisation over the past few years. I would like to relay my feelings about these predetermined groups of notes, and how they have helped me over the past 25 years.

The first scale most of us are introduced to is the major scale, and it is generally the one to which all others are compared. I soon learned why that scale must be memorized in all 12 keys: It is the source for chords, chord progressions, and ultimately songs. Soon after that, I learned the harmonic, natural, and melodic minor scales.

The next ones I came across were the chromatic and whole-tone scales. Finally, I learned about modal scales in a harmony class. I soon became familiar with more and more scales, and I began to practice them by playing them over one octave in all 12 keys. Eventually, I expanded my repertoire of scales to 30 different ones, and worked them up to two octaves. I have received great rewards for my efforts; I have tremendously expanded my ability to hear intervals. By forcing myself to play the scales in all 12 keys, I have also developed an expanded knowledge of keys through these scales. This is most evident when I have to play by ear. The added fingerboard familiarity and technique I gained helps when playing a solo (you have to make very quick decisions, and if you've played a particular group of notes before, your mind helps you find them faster). Of course, this helps when trying to create new bass lines.

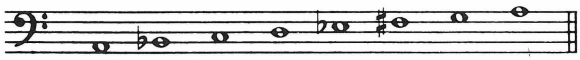
A few years ago, I began to analyze the harmonic modal scales. The following example shows a *G* harmonic minor scale:



Compared to a major scale, it has a flatted (lowered) third step and a flatted sixth step.

If you start the *G* harmonic minor scale on its second note (*A*), and go up an octave, you get a different scale:

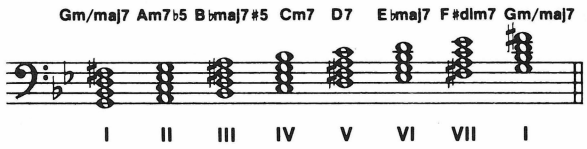
A harmonic dorian



I asked dozens of knowledgeable people about it, and no one seemed to know its name. Nonetheless, I found it worthwhile to practice, and for my purposes I have named it the *harmonic dorian* scale.

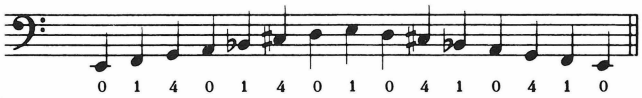
I have found that this scale can be used with m7♭5 (half-diminished 7th) chords. Such applications come up, for instance, when you have an *Am7♭5* chord on the key of *G* minor. This chord would be the II chord in *G* minor:

Diatonic 7th chords in G harmonic minor



Here is the *E* harmonic dorian scale:

E harmonic dorian (D minor)



Familiarize yourself with this scale, and then write it and play it in all 11 other keys. Once they are memorized, extend them over two octaves.

Herb Mickman

THE MINOR THIRD SOUND

Many years ago I went to a nightclub in New York City to hear the late saxophonist John Coltrane. I happened to be sitting behind two older musicians, and one of them had quite an ear. He was telling the other the chord changes of the tunes as they went by. My ears really opened up to their conversation.

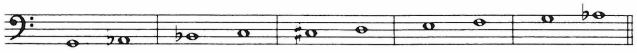
On one of the tunes there was a particular sound that Coltrane's improvisation had, and I learned that he was playing a minor third higher whenever he came to a certain chord change. During the break I asked one of the musicians what he was talking about, regarding Coltrane's modulating a minor third higher like that. He gave me an informal music lesson on a cocktail napkin, and some of the things he made me aware of are employed in my solos today.

I started to practice sequences that moved in minor thirds, and doing so opened my ears to some of the sounds that a lot of saxophone players were using. The exercises below are derived from interval sequences numbered 1-4. Play each in all 12 keys before moving on to the next. You may want to write out these examples in all 12 keys and read them for awhile. You'll see that these aren't something that can be mastered in two hours, but once you have these in your ear and under your fingers, you'll always find some good places to use them.

Herb Mickman

Example 1.

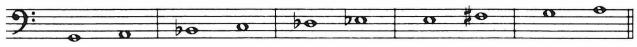
Minor 2nds a minor 3rd apart.



Example 1a.

Example 2.

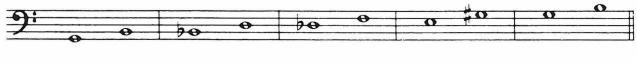
Major 2nds a minor 3rd apart.



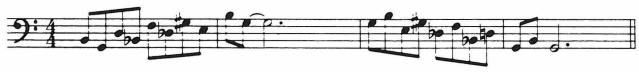
Example 2a.

Example 3.

Major 3rds a minor 3rd apart.



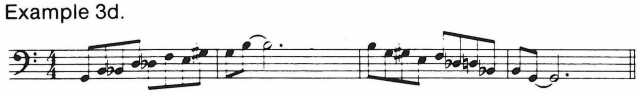
Example 3a.



Example 3b.

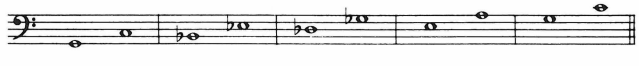
Example 3c.

Example 3d.

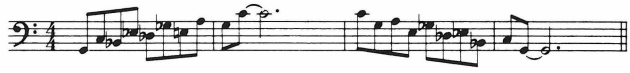


Example 4.

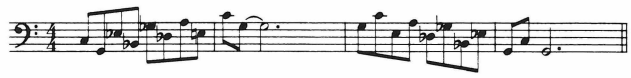
Perfect 4ths a minor 3rd apart.



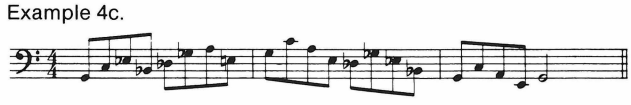
Example 4a.



Example 4b.



Example 4c.



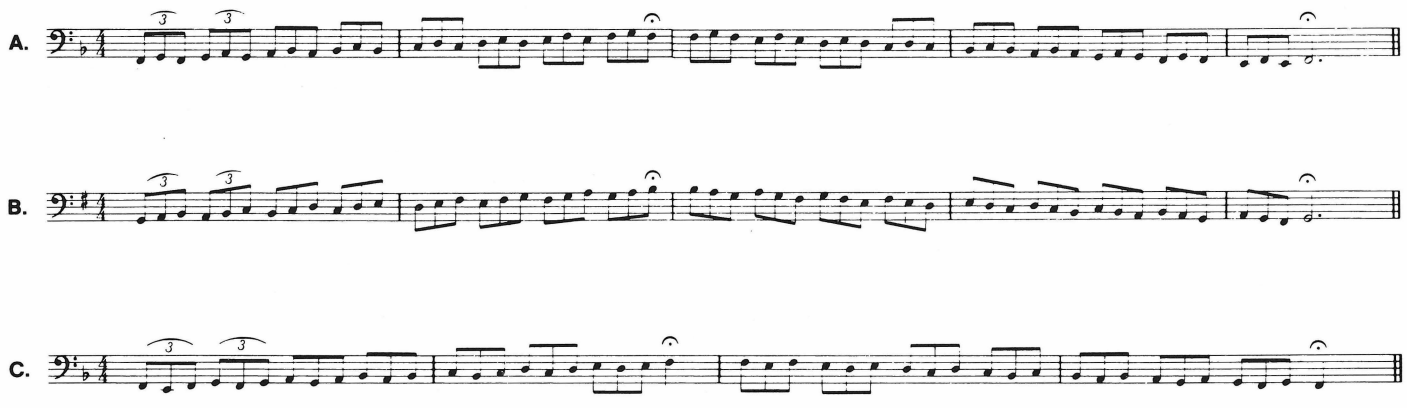
DEVELOP YOUR EAR WITH SCALE SEQUENCES

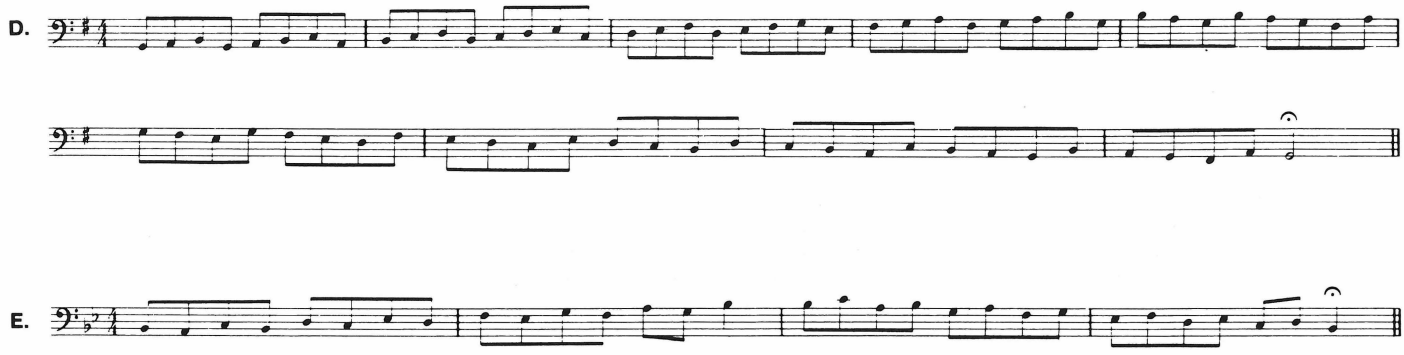
Some of the most amazing improvisers in the world have used sequences (the repetition of a pattern at various pitches) as a foundation to help in further development of their ears and to increase their facility with improvisation. Dizzy Gillespie, Charlie Parker, John Coltrane, and Freddie Hubbard are some of the giants of jazz who have admitted to practicing patterns in all keys to help then think faster and to get out the ideas on the bandstand. Some of the bass players who have developed their solo techniques through sequence practice are Ray Brown, Ron Carter, Red Mitchell, Eddie Gomez, Niles Henning, Orsted Pederson, and most recently, Jaco Pastorius. There are probably many others, but these are some of the bassists who have said that they practiced things in all keys to augment their playing abilities.

Here is a group of simple sequences based on the major scale. Each one should be played several times until it is memorized perfectly. Once you have these under control, try to play them in all 12 keys, evenly, in tempo. Your tempo. Your ability to do this will show you how developed your ear is right now and how much more you need to practice to develop it to the maximum. It may be helpful to write out each one in all 12 keys—then memorize them. Also, here are some hints to guide you in practicing scale sequences:

1. Play slowly at first and strive for an even tempo. Gradually increase the tempo without sacrificing accuracy or correct intonation. Use a metronome to aid in your counting, and always keep track of the tempos.
2. Try to accent the first note of each triplet, each eighth-note group of two, and each eighth-note group of four. Observe the fermatas (𝄐), since they tell you to hold the note a little bit longer than its actual value.
3. On sequences A and C, try to play the three notes of each triplet in one position. On sequence B, use your 1st finger to play the first note of each triplet that begins on the *G* string. Play with your 3rd or 4th finger on the highest note of each triplet on the *G* string. Don't use more than one position shift for each triplet.
4. Do not move on to the next sequence until you have mastered all the preceeding ones in all 12 keys. This means playing evenly in tempo.
5. Play the sequences in only one octave at first. Practice them chromatically, starting with the low *E*, working up to *E*♭. Start sequences C and D in *F* major.

Herb Mickman





SEQUENCES WITH FIFTHS

Each instrument has its own peculiar set of technical problems, and therefore its own unique practice literature. But some training concepts are just about universal; a case in point is interval patterns. Almost every method book has drills on various sequences of intervals—thirds, fourths, fifths, etc. The idea is usually to read and practice the exercises until your execution gets smoother. Some of you will also be familiar with my feelings about the necessity of playing scale or interval sequences in all 12 keys *by ear*. If you are going to improvise, this kind of command of your instrument is even more important than finger coordination, as you must be able to find notes as fast as you hear or feel them.

Below are some practice ideas using the interval of a fifth in various ways to build up your knowledge of the fingerboard. Ex. 1 shows two types of fifths—a perfect fifth and a flatted, or diminished, fifth. (A diminished fifth is a half-step smaller than the perfect fifth.)

Example 2 shows perfect fifths whose notes are played sequentially; each successive interval is one half-step higher than the previous one. On the way down the scale, start the pattern with the same *C-G* fifth you just ended on. Use the open strings when you can, as this allows you an extra split second to shift positions (if necessary). Don't just mechanically climb up two strings.

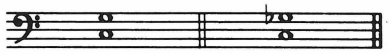
Example 3 features perfect fifths moving in whole-steps up and down. Ex. 4 has the fifths moving in intervals of a minor third (three half-steps). You should practice these exercises one at a time in all keys. In this manner you will build the ability to start a sequential interval pattern on any note and go up and down one octave evenly in tempo.

Example 5 shows *diatonic* fifths, meaning fifths built strictly from the notes of a major scale. All of the fifths—except for the one built on the 7th scale degree—are perfect. The fifth between the 7th and 4th of a major scale is always diminished. The pattern shown in Ex. 5a is a common sequence you may have heard or played before; Ex. 5b is the reverse of Ex. 5a—starting on the top note first and leaping down. The pattern in Ex. 5c mixes the ideas of the prior two patterns—one fifth goes up and the next one comes down. All exercises cover only one octave.

Remember: To gain facility and develop your ear, you must play each pattern smoothly, one at a time in all 12 keys, before moving to the next one. Write them out if it will help you memorize, but use your ear—not the written notes—as the ultimate reference when you play.

Herb Mickman

Example 1.



Example 2.

Example 3.

Example 4.

Example 5.

Example 5a.

Example 5b.

Example 5c.

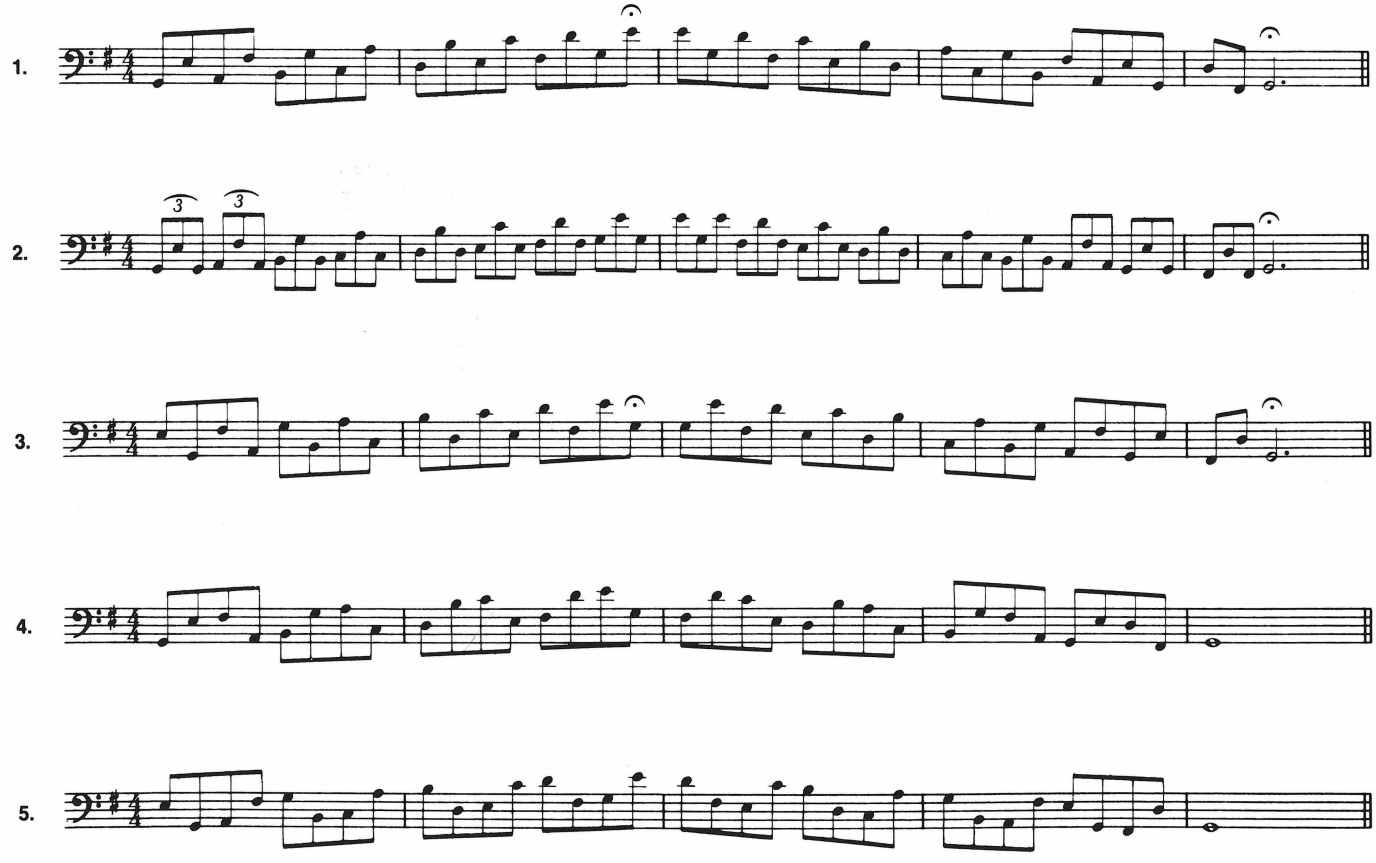
SEQUENCES WITH SIXTHS

A few years ago I was working with a saxophonist who was quite fond of playing sequences that used the interval of a sixth extensively. Some of those lines looked like this:

I asked him to play a bit slower for me, and I wrote out the notes. Then I tried to play what I had written; I started to work through some sequences in diatonic sixths based on the major scale. I found that I could get through them more smoothly if I played the lowest notes of the patterns on the *A* or *E* string.

Pattern 1 is a standard one found in several books. Pattern 2 employs the same idea, but with triplets. Pattern 3 is the reverse of 2. Patterns 4 and 5 combine ascending and descending sixths. Play pattern 1 over one octave in all keys *evenly* in tempo. Then try 2, then 3, 4, and 5.

Herb Mickman

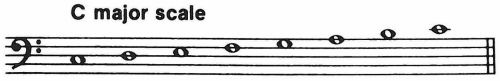


HARMONIC MINOR SEQUENCES

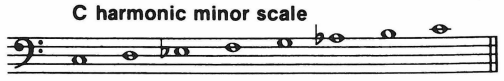
There are two notes in a *harmonic* minor scale that differ from the major scale—the 3rd and the 6th, which are lowered one half-step. I would suggest following this routine for gaining proficiency in the use of scale sequences: Play all 12 harmonic minor scales one octave up and down evenly in tempo from memory. Write them out if you have to, and then memorize them. Play sequence 1 in all 12 keys. Then proceed to 2, 3, 4, and 5. In sequences 1, 3, and 5 try to play all three notes of each triplet within the same position (without moving up or down the fretboard). Use the metronome to help you play evenly, and try to increase the tempo. Eventually play the sequences over two octaves in as many keys as your fingerboard allows.

Herb Mickman

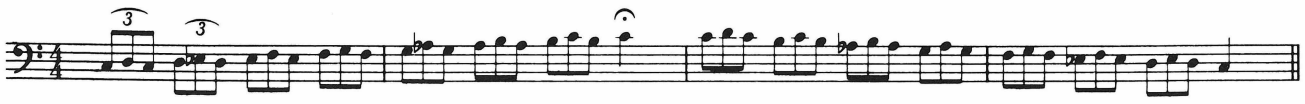
C major scale



C harmonic minor scale



1.



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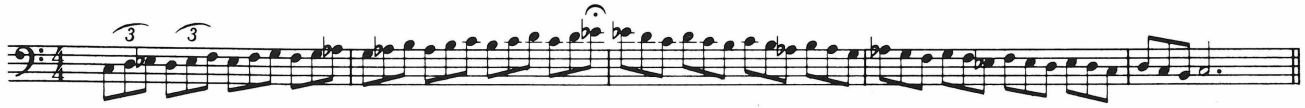

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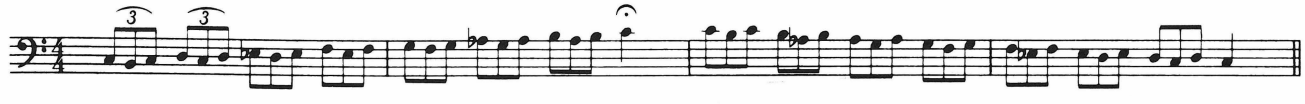
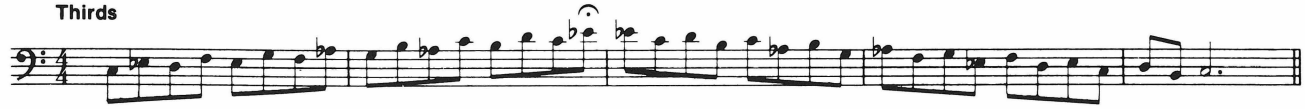


Thirds

4.



5.

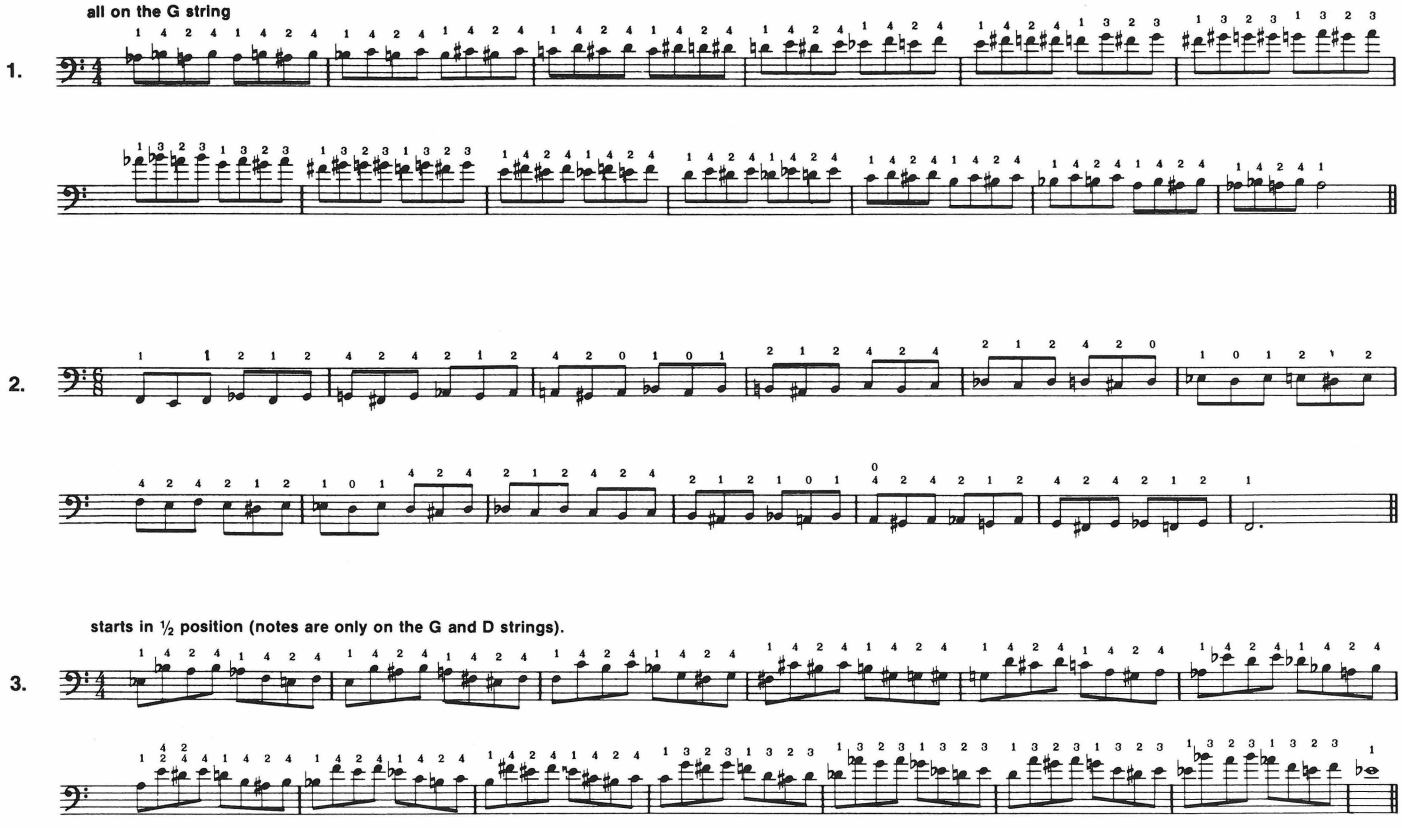
CHROMATIC CHOP-BUILDING SEQUENCES

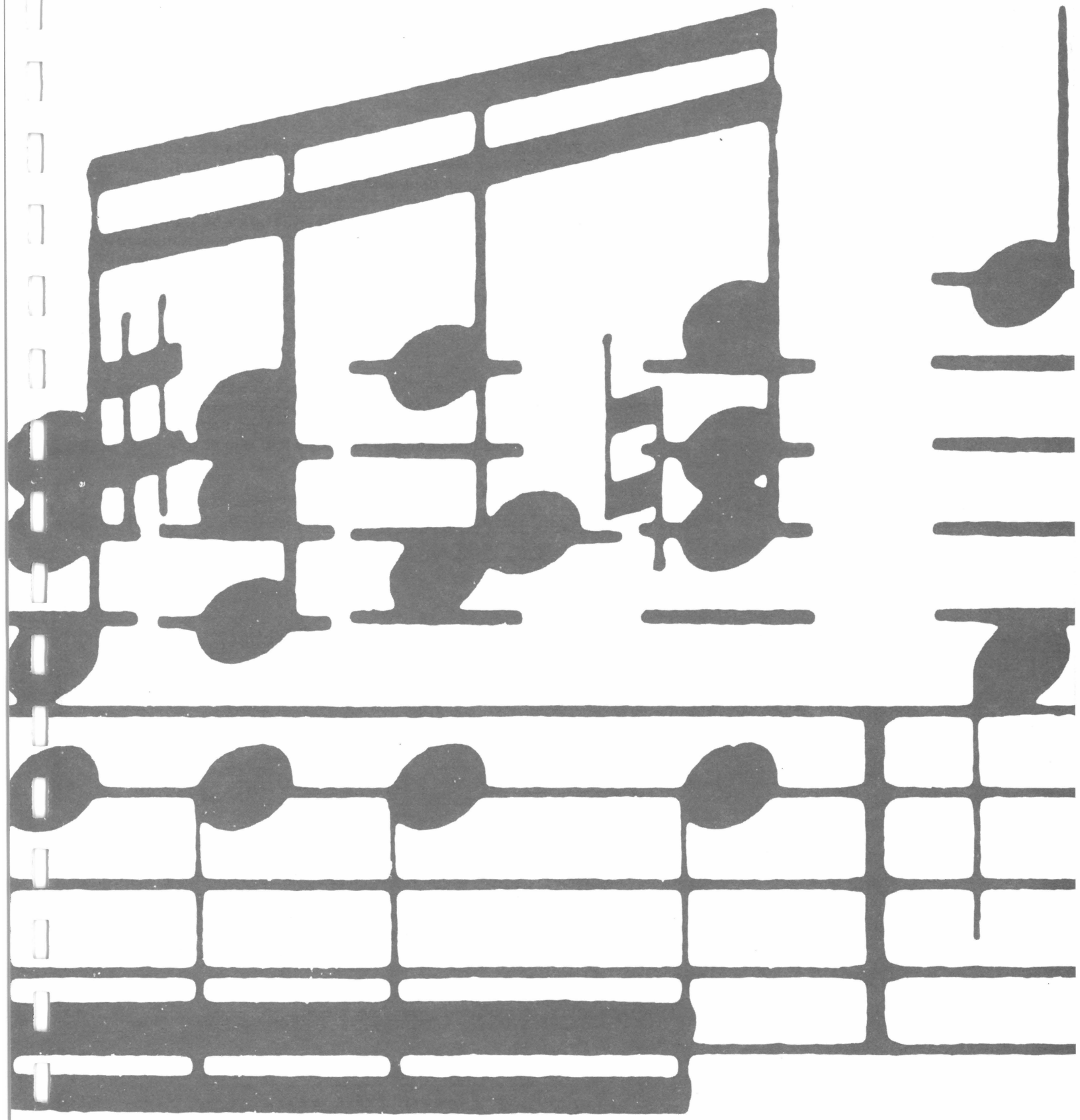
Many of the sequences I have written about here have come from a number of different sources. A few years ago I heard a violinist warming up with some patterns that moved chromatically. I tried these out on the bass and found that the muscles of my left hand got quite a workout. After playing these sequences I realized that I could keep my fingers closer to the strings, an advance that helped my overall technique. I started to use a metronome, and kept track of the tempos at which I played through the sequences.

Try playing the following sequences yourself using a metronome. After you've spent some time on these patterns you should be able to move the metronome's tempo up a notch every other day until you reach the limits of your abilities. To gain speed, though, you'll have to practice regularly—you can't lay back, or you won't get anything out of these exercises.

Sequence 1 moves up one fret every two beats. Sequence 2 should be mastered as written, then played starting on any note. Play it up and down one octave. Next play the second sequence over a two-octave range. Sequence 3 starts in half position (first fret) and moves up one fret every measure. If you feel that you must use your third (ring) finger instead of the fourth finger to fret the notes, go ahead—but be sure to keep your fingers curved. If you haven't been using a two-finger right-hand technique (for plucking the notes), this exercise is a good one with which to gain facility. Start slowly, and alternate your 1st and 2nd fingers.

Herb Mickman





10. CHORDS

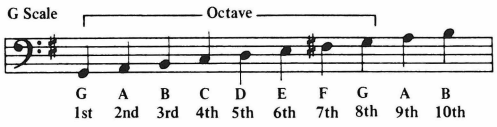
CHORDING

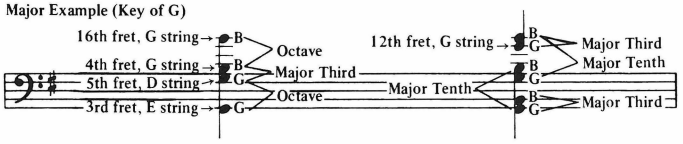
The bass, unlike the piano or guitar, is not known as a chording instrument. However, playing chords on the bass can be practical and enlivening for music when done with sensitivity, creativity, and ability.

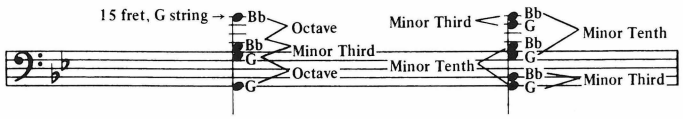
Taste, used with integrity, is the most important attribute for playing chords on the bass. If you're in a playing situation where there is an electric piano and a guitar, and a lot of chord progressions instead of rhythm patterns, it's in bad taste for the bass to do the same (unless of course that piece of music is orchestrated so that the bass must chord). If you want to play chords in a situation like this, use them sparsely and intelligently.

* * * *

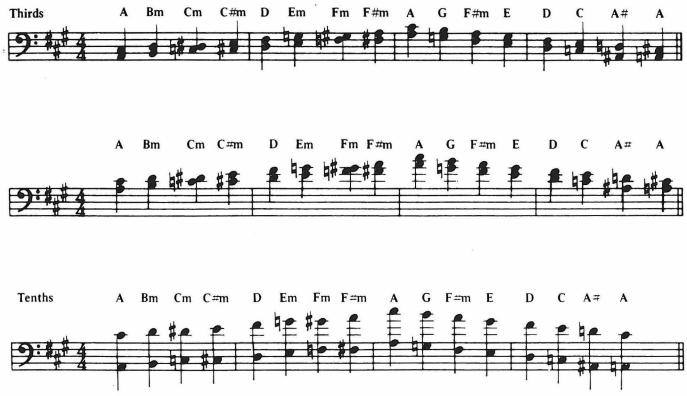
Thirds and tenths are the same notes, in that raising the third an octave higher than the tonic makes that note a tenth. Every consecutive line and space of the staff, ascending and descending, moves back and forth in major or minor thirds (depending on the scale that is in use).



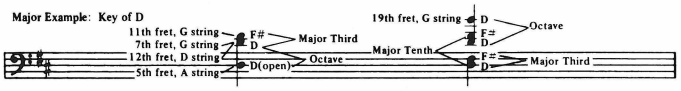


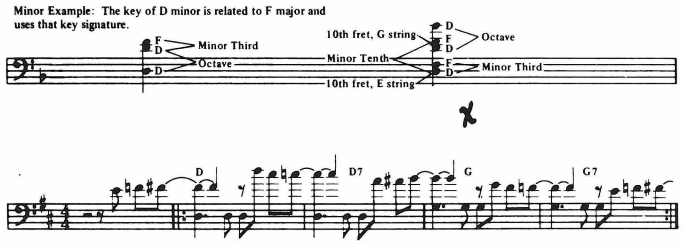


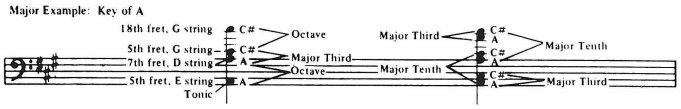
Example 1 is low in resonance and should be used only to familiarize yourself with thirds. Example 2 is more practical, because it is an octave higher and will blend more tastefully with other instruments. Example 3 is the same as 1 and 2, except the spread between notes forms tenths, thereby giving the progressions a good chord sound from the bass.

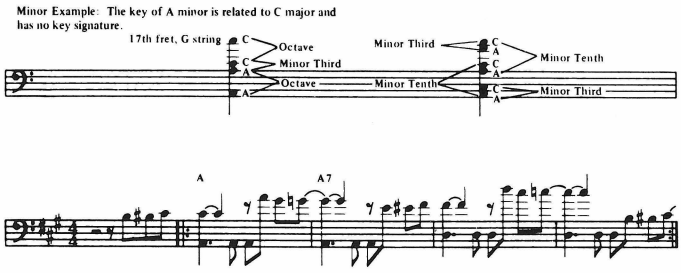


Open string chording is more effective in overall sound and performance when the player has the ability to play rhythmically as well as melodically. Let's take a look at the *D, A,* and *E* chord graphs of major and minor thirds and tenths. I've provided some exercises to facilitate the use of a bass line with chords.

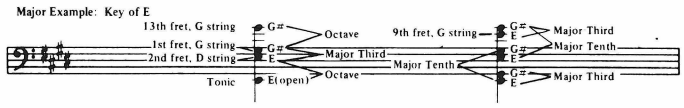


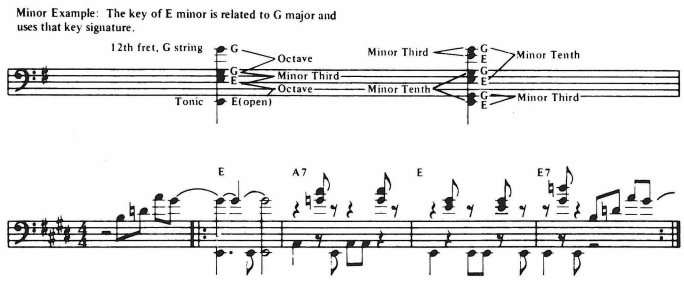






The open *E* string is the lowest sounding note on the bass. Therefore, it provides a wide range of workable bass line ideas using the chording technique.

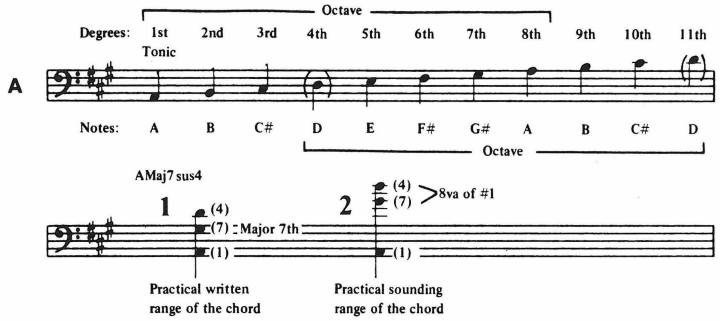


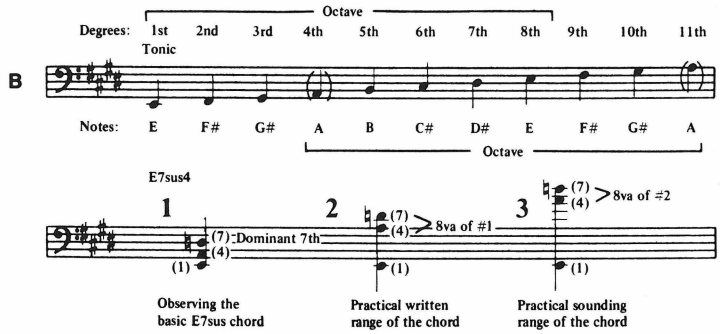


Chording can be heard on the following tunes: Quincy Jones—"Manteca," "Summer In The City," and "First Time," on *You've Got It Bad Girl* [A&M, SP3042]; Lena Horne and Gabor Szabo—"Message To Michael," and "Rocky Raccoon," on *Lena And Gabor* [Skye, SK15]; Len Novey—"Shy Ann." on *No Explanations* [Atco Records, SD33-274]; Donald Byrd—"Love's So Far Away," on *Black Byrd* [Blue Note, KA047-G]; Etta James—"Lay Back Daddy," *Etta James* [Chess, CH 50042].

The chording diagrams, exercises, and bass lines shown here should be used to spur individual changes, resulting in creativity. My concept of creativity in bass lines and patterns involves changing something already played. The notes that comprise our music scale have already been created, and several centuries of popular, ethnic, and categorized music have been written and patterned. The act of *changing something* replaces and represents creativity. Your options are to: 1) musically resist what you don't like; 2) musically solve problems that are personally incorrect; or 3) musically change something to fit your own individual taste. How you resist, solve problems, and/or change musical ideas constitutes your individualism and creativity. Thus, the essence of my theory is that what you *create* musically is only something you've changed.

The suspended chord produces an unresolved sound. Those diagrammed below are formed by using the fourth degree of the scale indicated.



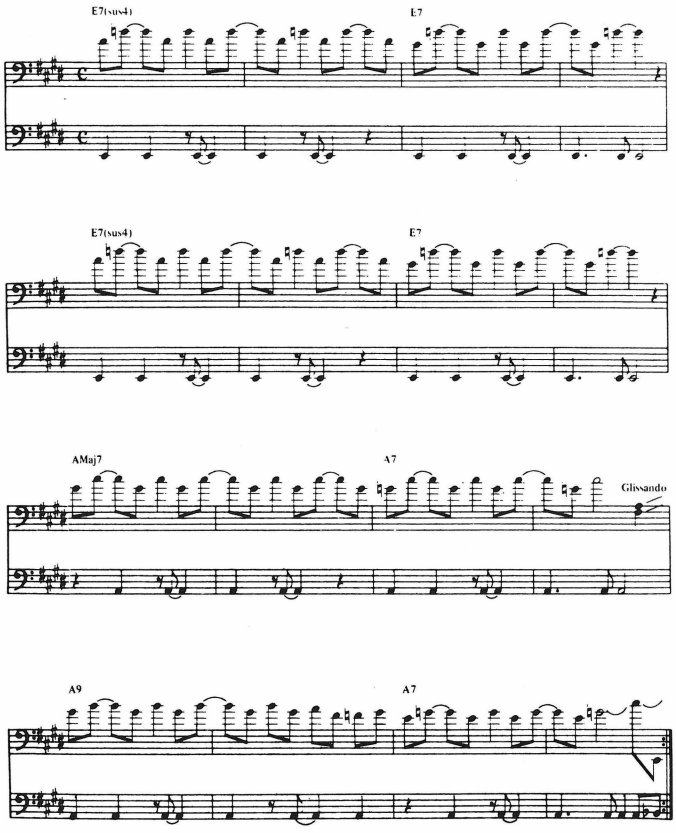


Notice that the eleventh degree of a scale is the same note as the fourth degree. Using either note produces a suspended sound. Your imagination and ability determines which notes you use, and when, how, and where you use them.

"Possessions" is my own composition. It uses major and suspended chords rhythmically to achieve its conception. Below, I've presented a segment of that piece.

Chuck Rainey

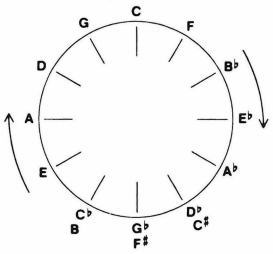
'Possessions' Chuck Rainey



CHORDS AROUND THE CYCLE OF FIFTHS

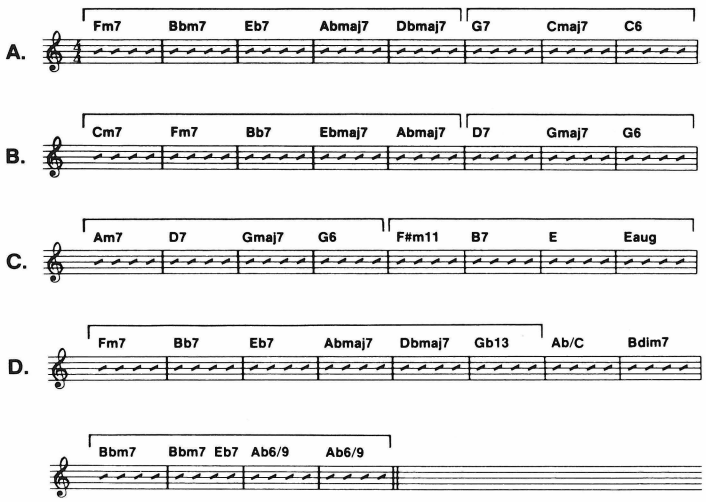
When I first started to study the string bass at the age of fifteen, I had a goal in mind: I wanted to be able to play jazz in a group. My first jobs were one-night parties—club dates or casuals. I'll never forget the phone call from a bandleader from another high school, who gave me all the details for my first job and then said, "You can fake, can't you?" I didn't want to blow the gig, so I mumbled, "Sure."

When I got there, the band started to play a lot of standards and popular tunes of the day. There was no rehearsal, and we didn't have chord charts. The leader didn't even tell us the name of the next tune. He held up fingers. For example, three fingers meant three flats, or the key of *E*♭. Needless to say, I played many more wrong notes than right ones, because my ear wasn't developed, and I didn't know how to memorize bass lines. A few jobs later, I played with a pianist a few years older than myself, and he was trying to help me play better bass notes. He frequently would yell out, "Cycle! Follow the cycle!" I had absolutely no idea what he meant. So, he drew this diagram for me and said, "This is the cycle of fifths."



The cycle (or circle) of fifths is a special order that chords move in throughout the course of many songs. Any letter name (*F, C*♯, etc.) can be the perfect fifth note of a key: *C* is the fifth note of *F*; *G* is the fifth note of *C*; etc. Many songs progress in the clockwise pattern I have shown. A great number of theorists and music teachers utilize the pattern in the opposite direction (moving from *C* to *G* to *D*, etc.), but in *practical* usage, the progression that I have shown is more commonly used and therefore more directly helpful to the bassist.

I was told to memorize it, and, as reinforcement, I was introduced to a standard called "All Things You Are" by Jerome Kern. It employs this concept. Here's the progression; I've used brackets to mark off each of the chords as they go around the cycle. The song is in *A*♭ major but also goes through several other keys.



To help you to *really* memorize it, and to be able to recognize a progression based on the cycle of fifths, I've written a few sequences. They should be practiced starting on every note. Play Ex. 1 many times, until you have it memorized. Next, start on *F* (on the *D* string). Then begin at *F*♯, *G*, and each note, raised by a half-step, until you can play it starting on any note.

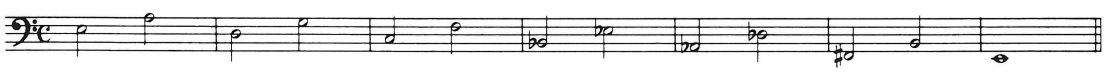
Ex. 2, has five sequences involving chords. The patterns in part A follow the root, 3rd, and 5th of every major chord through the cycle. Pattern B is arranged differently: root, 5th, 3rd. Part C combines the two previous patterns, and D incorporates dominant 7th chords. The final section, E, is the reverse of D: You descend though the notes of the dominant 7th chord (root, lowered 7th, 5th, 3rd, and then the root and 3rd of the next chord).

Patterns A, B, and C should eventually be played with minor triads (root, lowered 3rd, 5th), and then diminished (root, lowered 3rd, lowered 5th) and augmented (root, 3rd, raised 5th) triads. Patterns D and E could also be played with the first chord of each measure substituted with a minor 7th chord (lower the 3rd on each dominant 7th chord a half-step; e.g., from *D* to *C*♯).

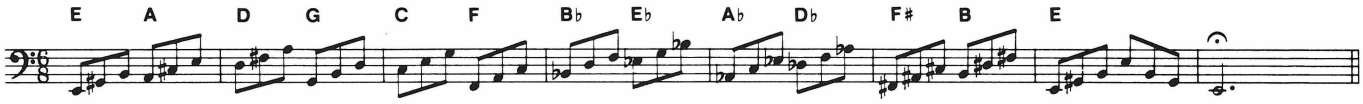
Practice of chords around the cycle of fifths will help expand your knowledge of chord progressions, and really improve your musical ear. Go at it slowly and listen to every note.

Herb Mickman

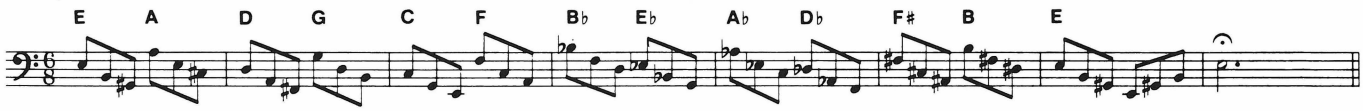
Example 1.



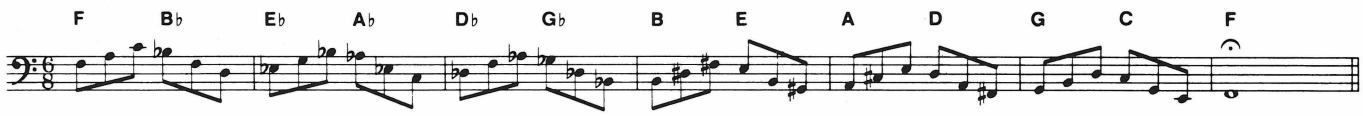
Example 2a.



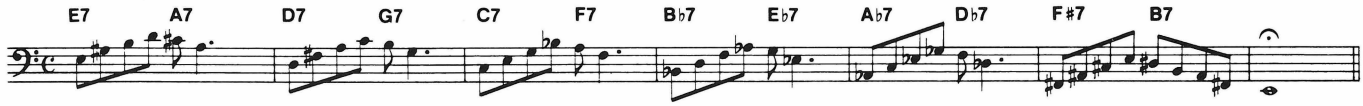
Example 2b.



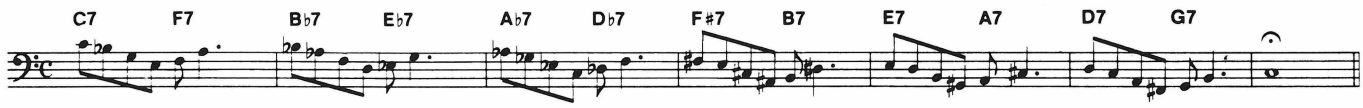
Example 2c.



Example 2d.



Example 2e.



CHORD SUBSTITUTION

Shortly after I began to play my first jobs—mostly parties where we performed dance music—I started working with pianists who would tell me to use specific bass notes in place of the ones I had chosen. Most of the songs we did presented the challenge of deciding upon the correct bass notes by ear—there were no chord charts. I was expected to know all kinds of songs, from old standards to the popular tunes of the day.

As I've said in many of my columns, when it came to fishing out the right notes, my batting average at age 16 was pretty poor, and I was frustrated. I bought sheet music and fake books, but the challenge of learning a million tunes and providing the best bass notes was mind-boggling. Nevertheless, I was determined to improve myself.

First I knew five songs well, and then ten, and eventually I became intimately involved with hundreds, Just when I thought I had a song covered, though, I would do a gig with a knowledgeable pianist who would say something like, "Play *D*♭ here instead of *G*."

My obsession with playing the best bass notes prompted me to work at the piano to figure out some alternative bass notes to use with various chords. I discovered a set of common substitutions that I would like to pass on to you. I hope that the insight these provide helps you to make better decisions on the bandstand.

In my examples, I've given the chords their diatonic number names (numbers that denote the scale tones upon which the chords are built); if this concept is new to you, see Ex. 1. In Ex. 2, we will cover some variations on the II-V-I chord progression (the chords are actually IIm7-V7-Imaj7).

In Ex. 3 there are several common variations on the II-V-I chord progression in the key of *F*. Also, I've written a pattern that should be practiced and memorized in all keys, because its use is called for in so

many songs. In other words, an advanced pianist or guitarist may change the original chords to a song in order to improve the flow of the harmony.

A few things determine what variations should be made. One is the melody note and its relationship to the chord (if a note clashes with the chords, it may not be a good choice). Another is the type of song. Some tunes lend themselves to more lush chords, while others sound best with very simple harmony. The key word is *taste*. If a substitution doesn't sound good, don't use it. You'll find that your taste develops from a lot of listening.

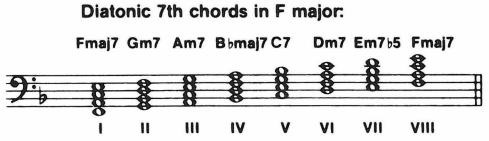
The best way to become really aware of chords substitutions is to play a duo or trio gig with a good pianist over a long period of time. There were many opportunities for me during my first years on the bass, and so I had hundreds of impromptu lessons on the bandstand. I also gained a lot of insight by comparing the chords in sheet music to those used on recordings of the same songs.

Practice the following exercises, and try applying their principles to familiar songs. Ex. 3a shows a IIm7♭5 acting as a substitute for a IIm7 chord. "B" demonstrates a substitution of a II7 for a IIm7. "C" shows a ♭VI7, which is a dominant 7th chord raised a ♭5th from the II chord, as a substitute for the IIm7. "D" illustrates a ♭II7, which is a dominant 7th chord raised to a ♭5th from V7, acting as a substitution for the V7. "E" shows a substitution of the V7 with a V7aug. The final example, "F" shows a substitution of the V7 with a VII7, which is a dominant 7th chord in first inversion (its 3rd is in the bass), a minor third higher than the V7 chord.

Once you have practiced these substitutions for a while, you will be able to find many uses for them (try them in songs with which you're already familiar).

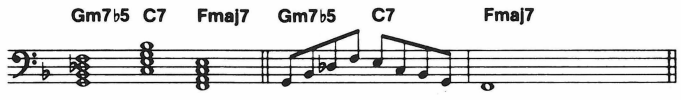
Herb Mickman

Example 1.

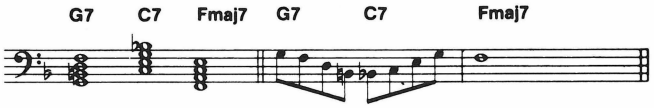


Example 2.

Example 3a.

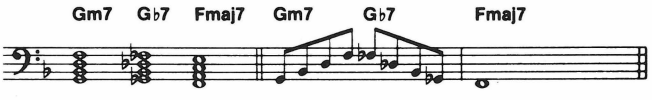


Example 3b.



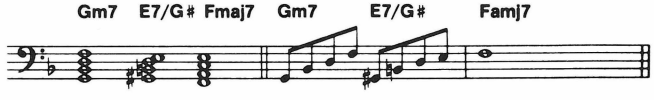
Example 3c.

Example 3d.



Example 3e.

Example 3f.



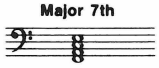
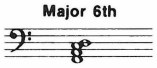
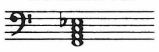
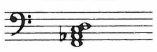
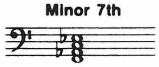
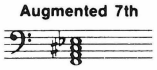
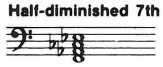
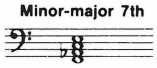
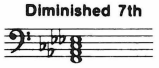
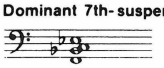
FOUR-NOTE CHORDS

Some of the problems that bass players encounter in learning how to use chords stem from the fact that the overwhelming majority of the examples shown in literature dealing with harmony is written in the treble clef. This is fine for most musicians—violinists, pianists, and, of course, guitarists—but bass players read *bass* clef. Also contributing to the problems confronting the bassists is that reading materials that discuss the nomenclature of chords usually deal only with basic chords, and while many books discuss chord construction, very few concern themselves with the specific needs of individual instruments.

So, because of these shortcomings in instructional materials, most bassists pick up what they need to know about the functional aspects of chord construction, usage, etc. from other players at rehearsals, jam sessions, or just in the course of conversation. This isn't necessarily bad, but chord construction is not always the easiest thing to learn, and picking up the "hows" without knowing the "whys" of chord usage can tend to make things more difficult. Also, some important points can be overlooked if the person showing you how to play something only refers to a specific instance and does not give you an idea of general principles that will work in all cases.

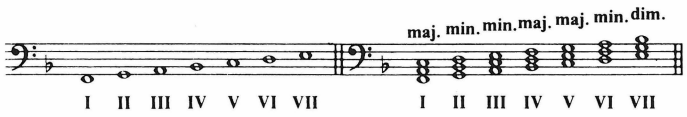
Because of these problems, I have put together some guidelines to add to your understanding of chords—their characteristics and notation. It will certainly require a lot of concentration and a concerned effort to memorize and to be able to use these chords as a basis for understanding chordal harmony. It will also take much practice; reading these guidelines will only account for about one percent of what is needed to use chords fluently. It is necessary to write out each of the chords in all 12 keys, and to practice running up and down every one of these examples. As you will see in the chart below, there may be a few different ways to notate each type of chord; some musicians will use one notation, while others are more inclined to use another. Therefore, it is advisable to familiarize yourself with all of them.

Herb Mickman

Chord	Possible notations	Characteristics	Chord	Possible notations	Characteristics
Major 7th 	**Fmaj7** **FM7 F△**	**A major triad with the 7th step of the major scale added.**	**Major 6th** 	**F6**	**A major triad with the sixth note of the major scale added.**
Dominant 7th 	**F7**	**A major triad with a lowered 7th added. This chord is often referred to as a 7th chord.**	**Minor 6th** 	**Fm6** **Fmin6 Fmi6 F-6**	**A minor triad with the sixth note of the major scale added.**
Minor 7th 	**Fm7** **Fmin7 Fmi7 F-7**	**A minor triad with a lowered 7th (dominant 7th with a lowered 3rd).**	**Augmented 7th** 	**F7#5** **Faug7 F7aug5 F+7** **F7+5**	**A dominant 7th with an augmented (raised) 5th, or an augmented triad with a lowered 7th.**
Half-diminished 7th 	**Fm7b5** **Fmi7-5 F-7-5** **F∅7**	**This is a minor 7th chord with a lowered (or diminished) 5th.**	**Minor-major 7th** 	**Fm(maj7)** **Fmi(add7) Fmin.#7** **Fmi-M7 Fmi+7**	**A minor triad with the seventh note of the major scale added.**
Diminished 7th 	**Fdim7** **F°7**	**A diminished triad with a double-flatted 7th added. This chord can also be thought of as a series of three minor 3rds.**	**Dominant 7th-suspended 4th** 	**F7sus4** **F7sus**	**A dominant 7th with the fourth note of the major scale replacing the 3rd.**

DIATONIC TRIAD SEQUENCES

One of the first things that you learn in high school or college harmony class is that each note (degree) of a major scale is identified by a Roman numeral, and that chords may be built upon these degrees. These scale tone chords, called *diatonic triads*, are often referred to simply as I chords, V chords, etc.

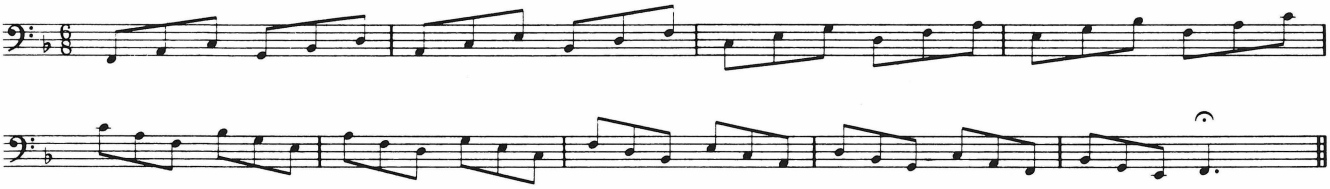


Chords I, IV, and V are major chords (a major chord is characterized by an interval of a major third with a minor third on top of that). The II, III, and VI chords are minor (an interval of a minor third with a major third on top of that). The VII chord is a diminished triad (a minor third with a minor third in top). This arrangement of major and minor triads is the same in all twelve major scales. Most of us understand this, but never really utilize these chords to any great extent.

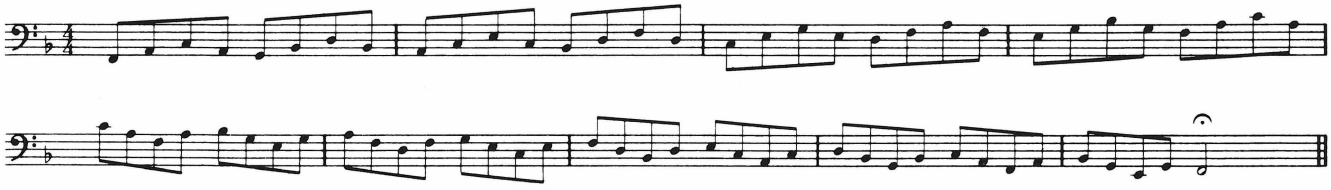
The following sequences will do wonders for developing your ear and your knowledge of each key, and will open up a lot of interesting fingering-pattern possibilities. I suggest that you write each of the examples in all keys. Play Ex. A in all keys, from memory, before going on to Ex. B. Each pattern may take up to a month to master and memorize in all keys. Don't be afraid to experiment with different fingerings, and to write down ones that work. I suggest that you use the open strings and start the patterns in the low positions.

Herb Mickman

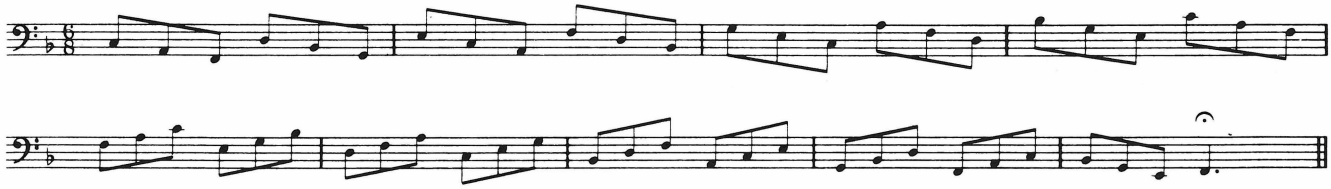
A.



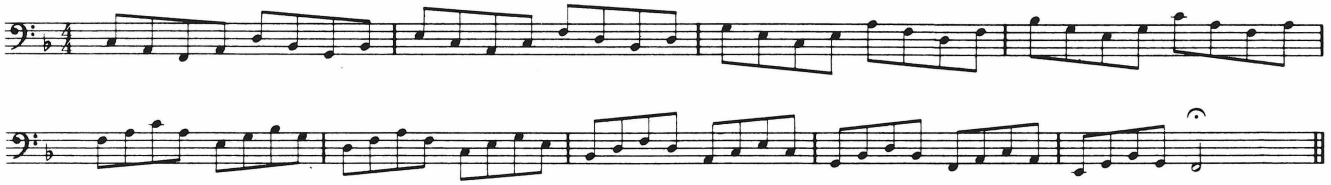
B.



C.

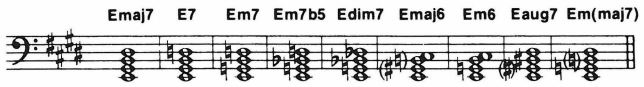


D.



FOUR-NOTE CHORD SEQUENCES

Now I'd like to expand the concept we just dealt with on triads and apply it to four-note chords. The exercises shown here are all based on major 7th chords. Your goal is to play them in all 12 keys, then to take the other four-note chords and practice them the same way. This is something that could take well over two years of practice, but it will develop your chord knowledge, your ear, and your concepts of fingering. The better you know the chords, the better lines you will play—both in the rhythm section and when it comes to solo.



Here are a few pointers to make the exercise easier to work with:

1. Be sure you are familiar with the chord construction before starting part A.
2. Write out part A so that you have all the notes in front of you, Mark fingerings in with a pencil.
3. Play each measure several times in order to memorize the chords.
4. Play parts A, B, C, and D starting on *E, F, G♭, G, A♭,* and *A* before attempting part E. Play part E in those keys.
5. When you can play part E perfectly from memory, start the diminished 7th chords, and follow the order of chords above the note *A* (*B♭, C, D♭,* etc.).
6. Make it your goal to play all the exercises evenly in tempo. Use a metronome and write down the tempos.

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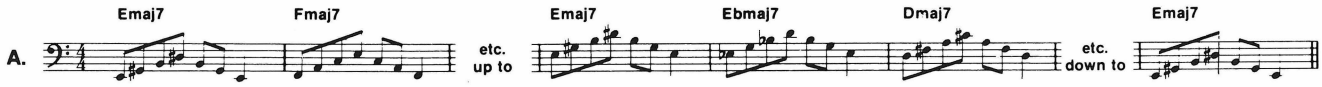
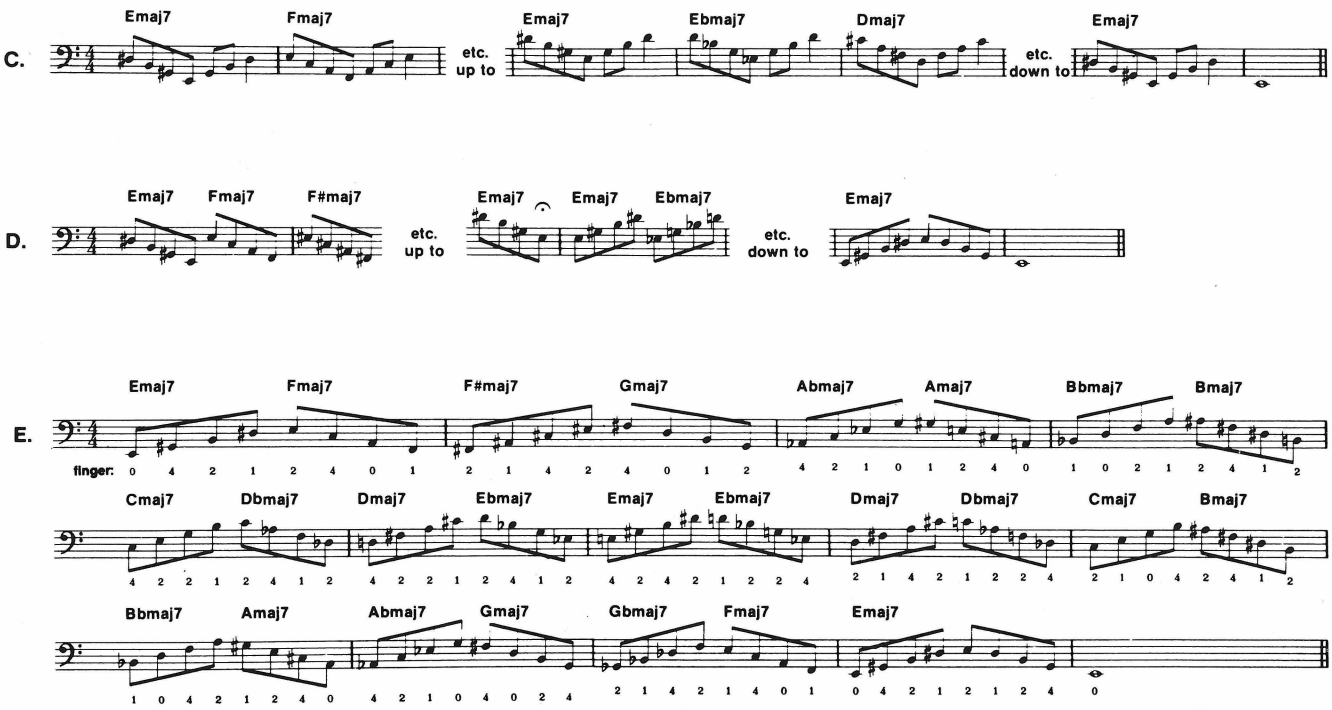
A.



B.



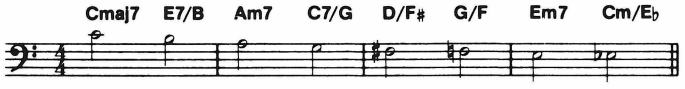
INVERSIONS AND ARPEGGIOS

In the last ten years, chord notations that indicate specific bass notes (other than the root) have become very common. For example, the symbol used to indicate a *B*♭*m* chord with an *F* bass note looks like this:

B♭m/F

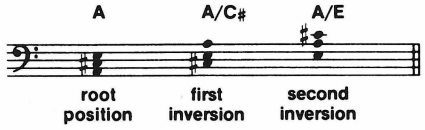
First you see the chord name, followed by the slash, then the bass note. Fig. 1 is a bass chord chart to a song with a lot of different chord inversions. Actually, inversions are just rearrangements of the chord notes in such a way that one of the notes other than the root is on the bottom.

Figure 1.



In Fig. 2 an *A* major chord is shown in "root position"; that is, with the root on the bottom. Then the chord is stacked in what is known as its "first inversion"—the 3rd is on the bottom. The next part of Fig. 2 shows the *A* chord inverted again, this time with the *E* (the 5th of the chord) on the bottom. This is known as the "second inversion."

Figure 2.



The basic idea behind inversions is not hard to understand, and gaining facility in their use in solos will come about through practice. Below are some routines for just this purpose. Play each one in every key. For example, play the arpeggio in part A in all 12 keys, using major and minor triads. Then try using diminished and augmented triads. Next, practice parts B and C in the same way. The pattern in part D combines a root-position triad in alternation with a first-inversion triad. After you have mastered part D (and are able to start on any note), try playing through it by making the first chord of each measure a minor triad—just lower the second note of each bar by one half-step.

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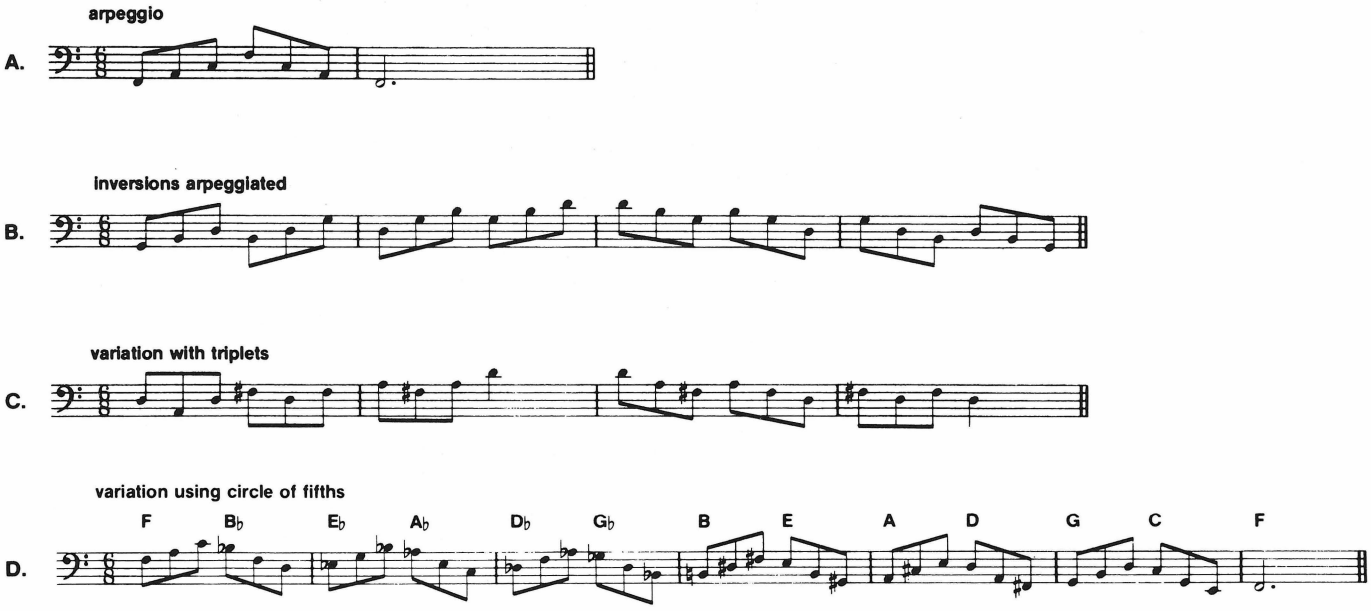


DIMINISHED CHORDS

There is a skill that almost all bass players will be called upon to use sooner or later: chord chart reading. I'm sure that most of you have had a piece of paper set in front of you with no musical notation other than the abbreviated names of mulit-note groupings, otherwise known as chords.

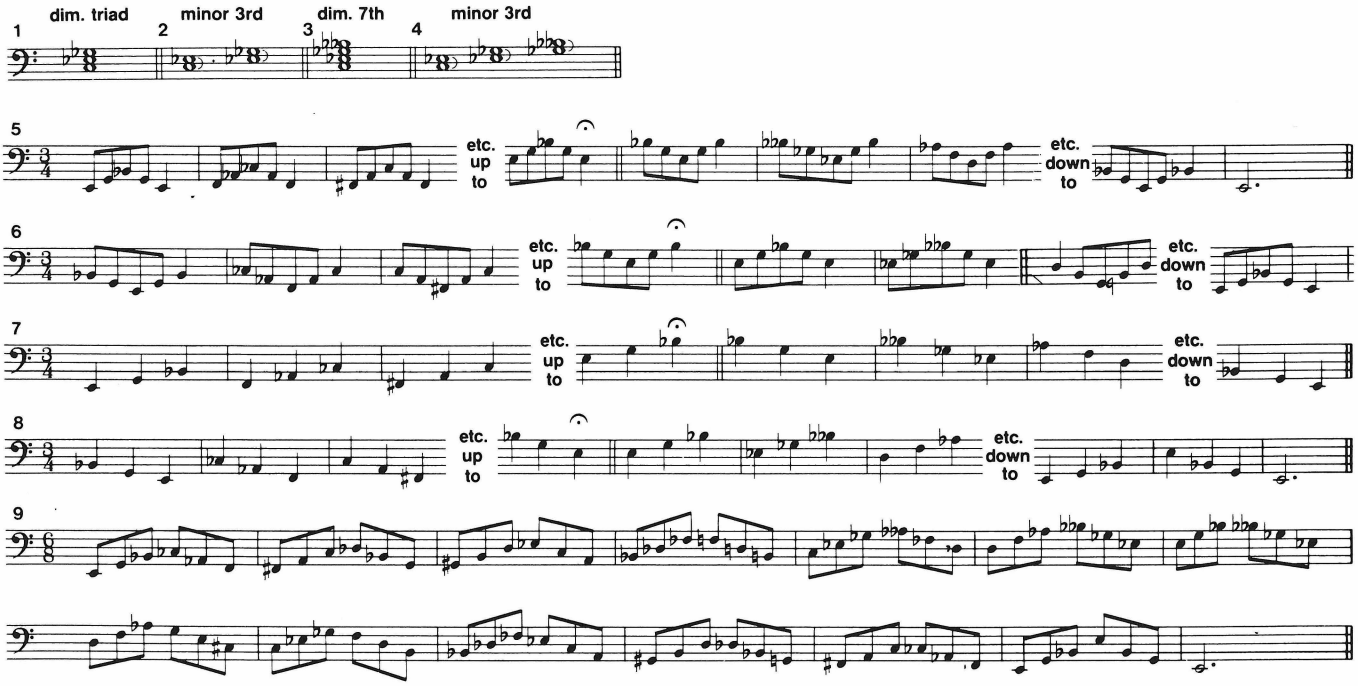
One of the things that I became aware of in my early jam session days was that many chords are not played exactly as written. It seemed that the better guitarists and piano players had some mysterious, magical insight into what the composer actually meant, but was unable to put down on paper. I would like to focus on what I have learned about diminished chords, both as *triads* (see Ex. 1) and as four-note chords (see Ex. 3).

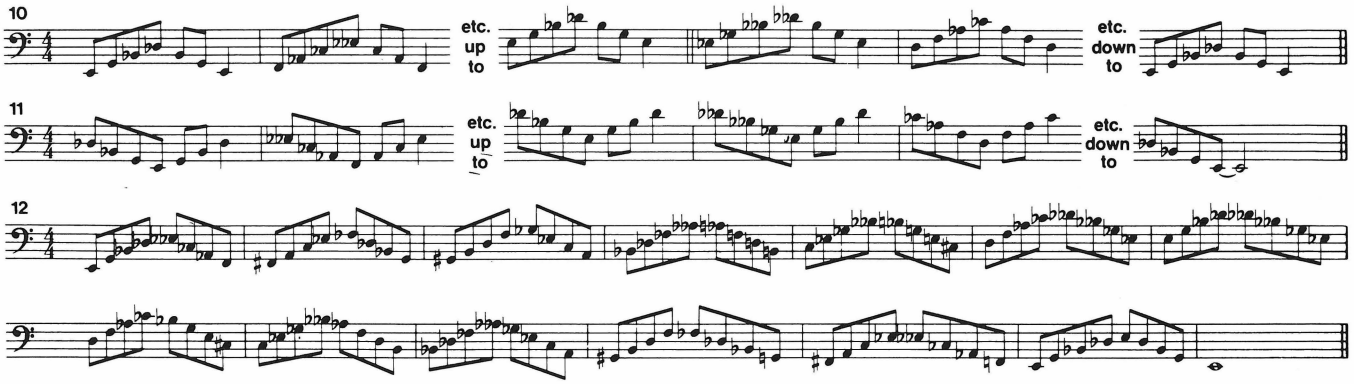
A diminished triad is a three-note chord that can be explained in two ways. First, it is like a major triad (which includes the root, third, and fifth of a major scale), except with a lowered 3rd and a lowered 5th. A second way to look at it is as a chord composed of two minor third intervals placed one on top of the other (see Ex. 2).

A diminished 7th is a four-note chord that has a root, lowered 3rd, lowered 5th, and a double-lowered 7th (see Ex. 3). Therefore, a diminished 7th chord is made up of three minor third intervals stacked upon each other(see Ex. 4).

I have written a series of exercises to attune your ear to the sound of diminished chords. Be sure to play them in all 12 keys. Note that in these exercises, all 3rds, 5ths, and 7ths are lowered. The pattern in Ex. 5 is root, 3rd, 5th, 3rd, root. Ex. 6 is just the opposite, following a sequence of 5th, 3rd, root, 3rd, 5th. Ex. 7 shows movement from the root to the 3rd and 5th, with the process reversed for its descent.

In Ex. 9 the first triad ascends and the second one descends. It is a combination of Ex. 7 and Ex. 8. The arpeggios in Ex. 10 run up and down the diminished 7th chord following a pattern of root, 3rd, 5th, 7th, 5th, 3rd, root. Ex. 11 flows in the reverse order of Ex. 10: 7th, 5th, 3rd, root, 3rd, 5th, 7th. The final example is a combination of the two previous ones; the first arpeggiated chord ascends, the second one descends.





When I was first learning about chords and their construction I heard someone say that there were only three diminished 7th chords. I couldn't really understand what that meant, since I knew that there were 12 keys. What I didn't realize though, was that each time you play an inversion of a diminished 7th chord you get a combination of notes (built in minor third intervals) that forms *another* diminished 7th chord in root position (see Ex. 13).

These chords form three groups which we will call I, II, and III. Because the diminished 7th chords in each group are interchangeable, they can be subsituted for each other (see Ex. 14).

If you take the top three notes of a dominant 7th chord and add a lowered 9th, you will find a diminished 7th chord (see Ex. 15).

The *E* diminished 7th is part of group II. Sometimes when the chord would be better written as *C7♭9*, the composer will only notate a part of it—the *Edim7* (or *Gdim7* or*B♭dim7*).

In a diminished 7th chord, the intervals separating successive notes are equal; these intervals are minor thirds. As a result, each diminshed 7th can perform several functions depending on which tone serves as the root. For example, the *Edim7* contains the same notes as a *Gdim7, B♭dim7* (*A♯dim7*), and *C♯dim7* (*D♭dim7*). Thus, a single group of notes—in this case, *Edim7*—can effectively provide several chords, and all of them could be used as weak substitutes for the *C7♭9*.

Choosing the best inversion depends on where the diminished 7th is headed. Usually it leads to a minor triad or a minor 7th chord. Suppose it is leading to *Fm7*. In the circle of 5ths, *C* leads to *F*. Therefore, a *C7* chord leads to an *F* chord. A *C7* also leads to *Fm* or *Fm7*. Many times, when a dominant 7th leads to a minor chord, that dominant 7th will have a lowered 9th. So it is common to see a weak diminished 7th lead to the *Fm7* (instead of *C7♭9*).

To help you become familiar with the sound of this progression, I've included a group of melodic exercises to be played in all 12 keys (Ex. 16). You will also want to refer to the section on scales to check out the patterns based on the diminished scale.

The first chord is *Dm*. The second is either *Gdim7, B♭dim7, C♯dim7,* or *Edim7*. The second chord is really an *A7♭9*. That's the way the experienced pianist or guitarist would think of it. The *A7♭9* is the V chord in the key of *D* minor, and it progresses to the *Dm* chord naturally.

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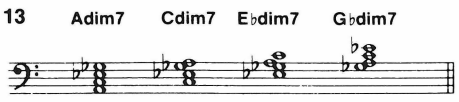

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Group I

Cdim7 (B♯dim7) = E♭dim7 (D♯dim7) = G♭dim7 (F♯dim7) = Adim7

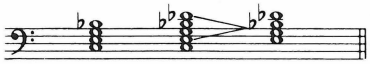
Group II

C♯dim7 (D♭dim7) = Edim 7 (F♭dim 7) = Gdim7 = B♭dim7 (A♯dim7)

Group III

Ddim7 = Fdim7 (E♯dim7) = A♭dim7 (G♯dim7) = C♭dim7 (Bdim7)

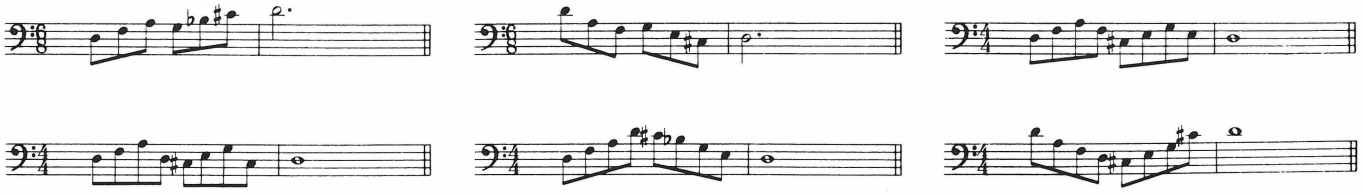
15 **C7** **C7♭9** **Edim7**



16

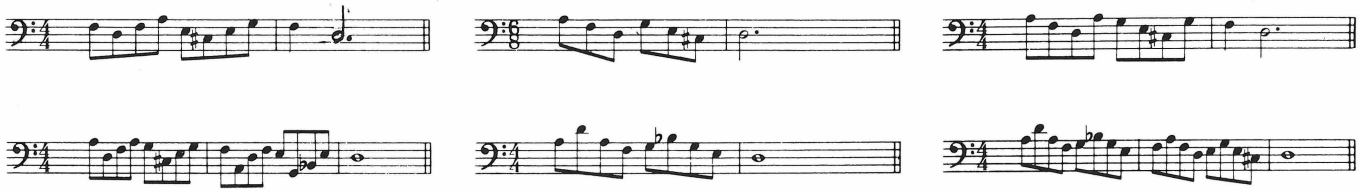
Patterns with minor and diminished chords:

starting on the root



starting on the 3rd

starting on the 5th



AN INTRODUCTION TO THE MINOR 7th CHORD

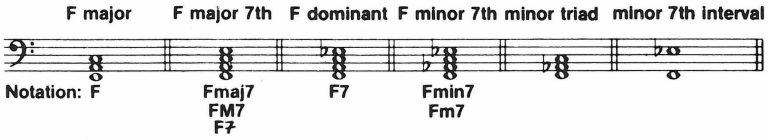
Below is an explanation of how the minor 7th chord comes about. First you see an *Fmaj* triad. Then the 7th note of the major scale is added on top, forming a "major 7th" chord. If you lower the 7th note by a half-step you then get a *dominant 7th* chord; in this case it's known as the *F7*. If you lower the 3rd of the dominant 7th chord, you now have a *minor 7th* chord.

Looking at the three bottom notes of a minor 7th you see a minor triad. The interval between the bottom note and the top note is a minor 7th. These are the ingredients that make up this very common chord. If this is new to you, I would suggest writing out all 12 minor 7th chords, so that you can see the notes in front of you.

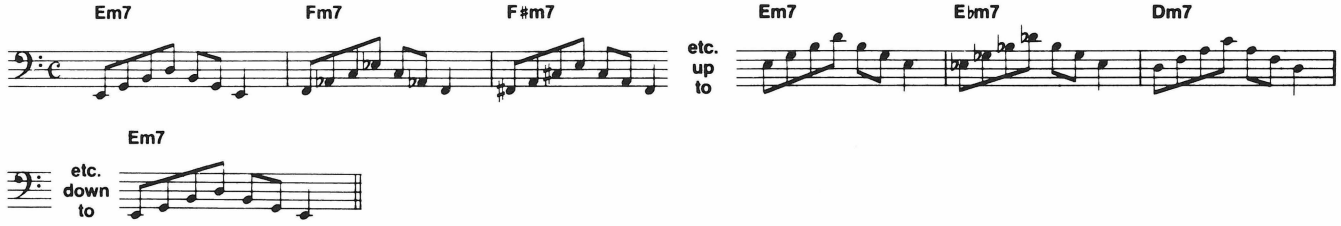
Ex. 1 goes up and down each chord in this manner: root, ♭3rd, 5th, ♭7th, 5th, ♭3rd, and root. Start on the low *Emin7* chord and go up chromatically to the next *Emin7* chord; then come back down. Ex. 2 simply follows a format of root, ♭3rd, 5th, and ♭7th on the way up, and ♭7th, 5th, ♭3rd, and root on the way down. Ex. 3 is just the reverse of Ex. 2 starting on ♭7th, 5th, ♭3rd, and root. Ex. 4 combines Ex. 2 and Ex. 3: One minor 7th goes up and the one that's a half-step higher comes down.

There is a lot of work on this page, so don't expect to play all the exercises perfectly in one afternoon. Work on Ex. 1 for one or two weeks until you can go through it evenly and in tempo. Then spend a few weeks on Ex. 2, Ex. 3, and Ex. 4. The ultimate goal is to be able to play Ex. 4 starting on any note—going up and down one octave. You'll not only learn the chords, but you'll learn some more of the fingerboard.

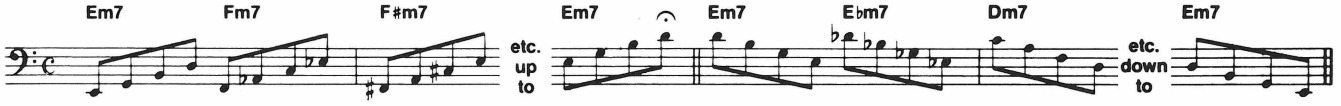
Herb Mickman



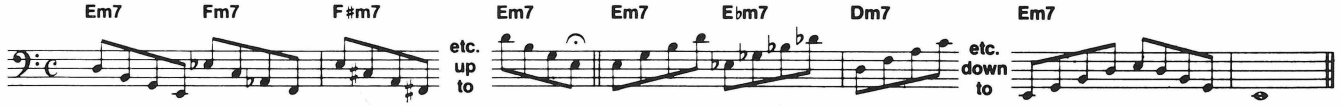
Example 1.



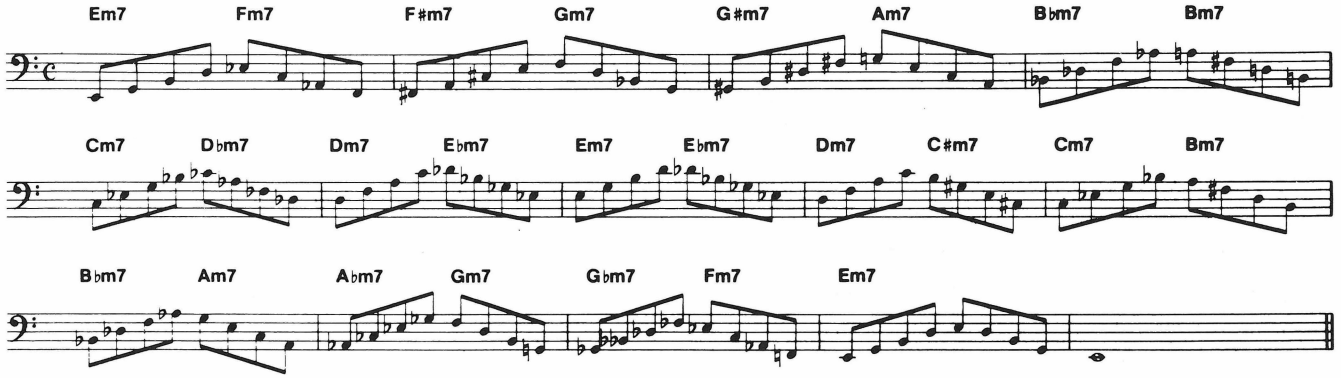
Example 2.



Example 3.



Example 4.



THE HALF-DIMINISHED 7th CHORD

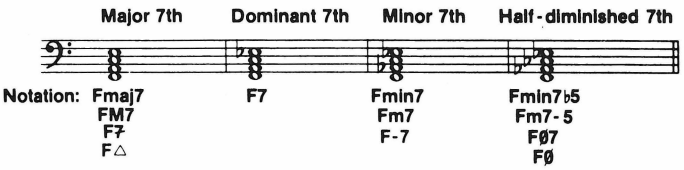
My introduction to chords came with a series of piano lessons dealing with popular music. I was 11 years old, and quite reluctant to get into any serious practice, and the teacher only gave me chords I would need—the chords in the songs—and nothing more. I remember trying to play by ear, and how horrible I was because I didn't know what I was doing.

A few years later, I took a harmony course in high school, which really helped me understand the various chords and their construction. One day I was introduced to a minor 7th chord with a lowered (flatted) 5th; see Ex. A. The common name for this type of chord (which features a ♭*3,* ♭*5,* and ♭*7*) is the *half-diminished 7th.*

Here is a series of exercises to practice in order to familiarize you with its construction. Practice Ex. 1 slowly up and down over one octave until you can play it from memory, evenly and in tempo. Next, work on Ex. 2 in the same manner, and then progress to Ex. 3. This final example should eventually be worked out starting on any note, ascending and descending in tempo.

Try to play these patterns with the least amount of shifts (movements from one hand position to another). If you play the ♭5 and ♭7 of each chord within one position, you will be able to accomplish this. When practicing each pattern, be sure you're thinking of the full name of the chord and that you know every note that you're playing.

Example A.

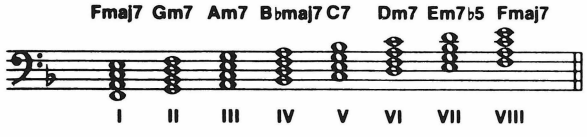


Example 1.

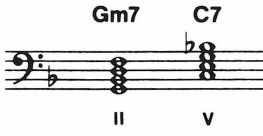
Example 2.

Example 3.

Example 4. **Diatonic 7th chords in F major:**



Example 5.



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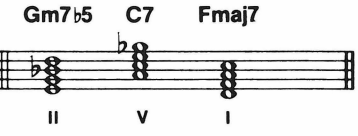
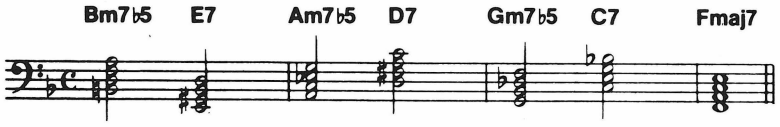
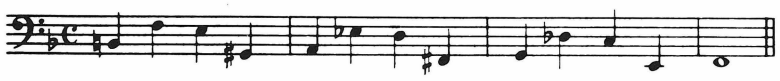


Example 7.

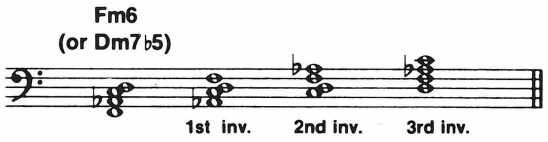


Example 8.

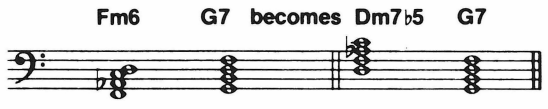


Example 9.

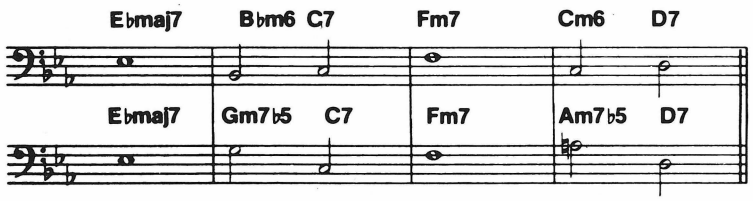
Example 10.



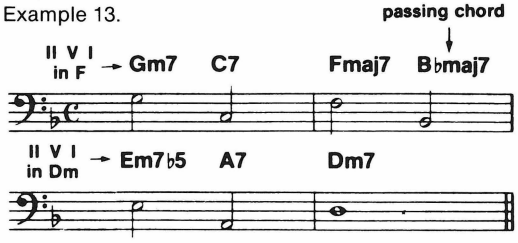
Example 11.



Example 12.



Example 13.



Those of you who are familiar with the diatonic 7th chords (see Ex. 4) will know that the II chord of any major key is a minor 7th chord. A very common chord progression consists of the II chord going to the V (see Ex. 5). A half-diminished 7th chord built on the second step of the major scale can be used as a substitute for the normal II chord, which is a minor 7th (see Ex. 6). This substitution works best when the melody note of the minor 7th is the root, lowered 3rd, or lowered 7th of the chord. However, the key word here is *taste*. Ex. 7 illustrates the use of half-diminished 7th chords in a chord progression based on the cycle of 5ths, starting with the *Bm7♭5* chord in the key of *F*.

I really became aware of how often this chord is used as a substitute for the minor 7th chord when I started listening to some of the great jazz pianists. I would hear them play a song that I though I knew, and became aware of how often they lowered the 5th of the minor 7th chords. I've heard many jazz bass players use lines like the ones shown in Ex. 8 and Ex. 9. These bass lines should be practiced and memorized in all 12 keys.

Another important thing I discovered by listening to great jazz pianists was how a minor 6th chord was really a half-diminished 7th chord in an inversion. Look at Ex. 10, and see how the inversions of an *Fm6* work. The third inversion is actually a *Dm7♭5* in root position. The bass player should use a *D* note to hold down this chord.

A very common progression that you'll run across in sheet music is a *Fm6* to *G7*. I noticed that the more knowledgeable pianists and bassists would play a *Dm7♭5* to a *G7* in that situation (see Ex. 11). The *D* to *G* root movement is also found in the cycle of fifths. Ex. 12 shows a typical chord progression, and then shows how half-diminished 7th chords are substituted for the minor 6ths.

If you look back at Ex. 4, you will see that the VII chord of any major key is a half-diminished 7th. This VII chord functions like a II chord of another key. For example, *E* is the second note of what key? The answer is *D*. So, *Em7♭5* is the II half-diminished 7th chord in the key of *D*. Remember about II chords going to V chords? For instance, the V chord in the key of *D* is *A7*—the V chord of *D*. The key of *D* at this point could be either *D* major or *D* minor. Ex. 13 is a typical chord progression showing how the *E* half-diminished chord works in the key of *F*. It's the II of *D* minor.

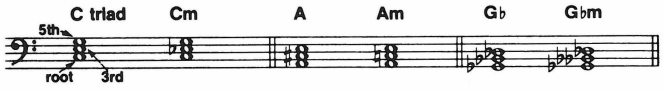
Herb Mickman

PRACTICING MINOR TRIADS

I have mentioned before that you never really know chords until you practice them on your instrument. Most of my students seem to do pretty well with major triads, but as soon as they get to minor triads their accuracy isn't as good—until they practice them on the bass.

An important point to remember about a minor triad is that the 3rd of the chord is lowered one half-step, although it keeps the major triad's letter name (e.g., *F* becomes *Fm*). The C[2] note lowered one half-step becomes a *C*♮, and a *B*♭ lowered one half-step is a *B*♭♭ (not necessarily *A*♮):

Example 1.



Play the pattern for Ex. 1 on the *Cm* chord. Notice that it's a five-note pattern: root, 3rd, 5th, 3rd, root. Now play Ex. 1 evenly in tempo. It should be memorized so that you won't have to look at it after a few times. Next, transpose and play it from *Fm* to *Fm*.

Now try the pattern in Ex. 2. It is the reverse of the previous pattern, starting on the 5th of the minor triad, and following this sequence: 5th, 3rd, root, 3rd, 5th. It will be a bit more challenging, because you will have to think of the 5th as a starting note. Try to visualize all three chord tones. This will really help to make the pattern easier to play.

After Ex. 2 is mastered try Ex. 3, which is just root, 3rd, 5th, in an ascending pattern on each minor chord. Then go on to Ex. 4, which is a group of descending arpeggios (5th, 3rd, root) based on minor triads.

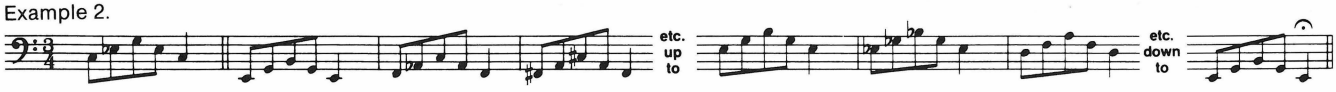
Once you can play these first four exercises cleanly and evenly—and from memory—go on to Ex. 5, which combines Ex. 3 and Ex. 4. One minor triad goes up, next one (which is a half-step higher) goes down. Don't expect to master Ex. 5 in one afternoon. These arpeggios should be practiced for several weeks.

After you have memorized Ex. 5, play it in all keys from *F* minor to *F* minor one octave higher. Then try it from *F*♯ minor. Eventually, you'll be able to start on any note and do the whole pattern up and down over one octave.

Start all patterns in the lowest positions of the bass, using open strings whenever possible. Also try to connect the 5ths of the minor triads in Ex. 5 within one position. This will save you a lot of shifting around, and the pattern will sound smoother.

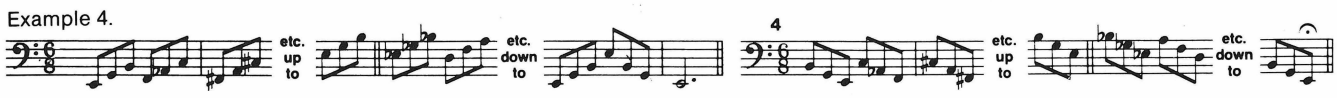
Herb Mickman

Example 2.

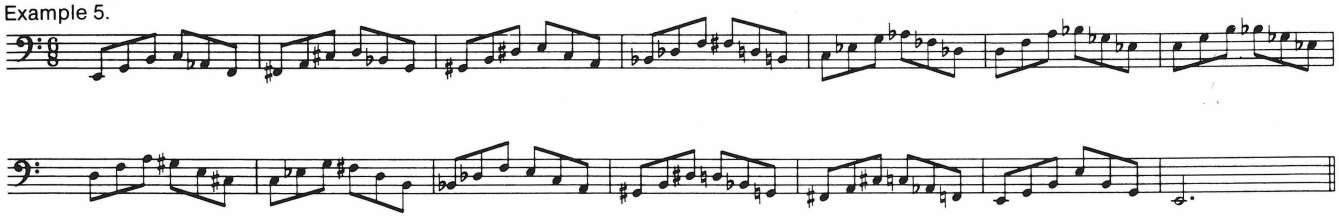


Example 3.

Example 4.



Example 5.

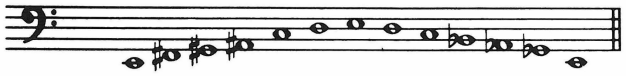


PRACTICING CHORDS IN WHOLE TONES

The benefits one gains from practicing chords are many: a review of the chordal components, ear development, and deeper fingerboard knowledge. Previously, we've covered chromatic chord practice and playing chords around the Circle of Fifths. Now I'd like to illustrate some ideas for practicing chords in intervals of whole-tones or whole-steps.

Ex. 1a shows a whole-tone scale from low *E* up an octave and then down. Ex. 1b has the notes of major triads built on each step of the scale. This is what we are going to explore—major triads moving in whole-tones.

Example 1a.



Example 1b.

Here's a description of each of the exercises based on Ex. 1. The pattern is Ex. 2a is root-3rd-5th-3rd-root, then up a whole-step. Continue in this manner up to *E*, then come down the same way. Pattern 2b is just the reverse—you start on the 5th of the chord, descend to the root and go up again. In pattern 2c, play each ascending triad root-3rd-5th, and play each descending one 5th-3rd-root. Pattern 2d reverses 2c, and 2e mixes the concept of both 2d and 2e, with one chord going up and the following one going down from the 5th; the following chord goes up from the root.

Practice suggestions: Play each exercise chromatically up the scale before going on to the next one. For example, learn to play pattern 2a from *E* to *E* evenly in tempo from memory. Then play the pattern from *F* to *F, F*# to *F*#, and so on, chromatically up to *D*# to *D*#. After that's been done, continue through the other patterns in like manner.

After you've gotten the knack of playing these patterns in major triads, switch to minor triads, then diminished triads, and augmented triads. If this seems too difficult to think through, don't hesitate to write out the notes in each pattern, reading it again and again until it's memorized.

This is several weeks (or perhaps months) of work, so don't expect to get it down on one afternoon. After tackling this form of intensive practice in triads, you'll definitely find you have greater facility in this essential area of musicianship.

Herb Mickman

Example 2a.

Example 2b.

Example 2c.

Example 2d.

Example 2e.

Example 2f.

UNDERSTANDING MAJOR 6th CHORDS

I've discussed various three-note chords and illustrated practice routines for gaining facility with them. I have also written about various 7th chords. Now I would like to show you some ways to practice other four-note chords called major 6ths.

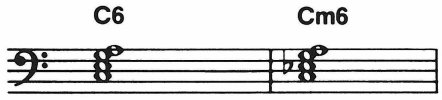
If you look at Ex. 1, you'll see a major triad with a major 6th (the sixth note of the major scale). It is that combination of the major triad and the major 6th that forms a major 6th chord. It is often just called a 6th chord—you must assume it is major. To the right of the major 6th chord shown in Ex. 2 is the minor 6th. It has a triad with a lowered (or minor) 3rd, and then a major 6th is added on top. Remember: You will gain a whole lot more fluency with improvising if you have the sounds of these chords in your ear and under your fingers.

Ex. 2 shows various ways to practice the major 6th chords. Pattern A has each one going up chromatically from the root through the 6th. Then the pattern descends, starting with the 6th of each chord. Ex. 2A is just the reverse: It ascends chromatically, starting on the the 6th of each chord, and comes down from each chord's root. Pattern C mixes the concepts of A and B. One major 6th goes up, and the chord that's a half-step higher goes down (from its 6th to its root).

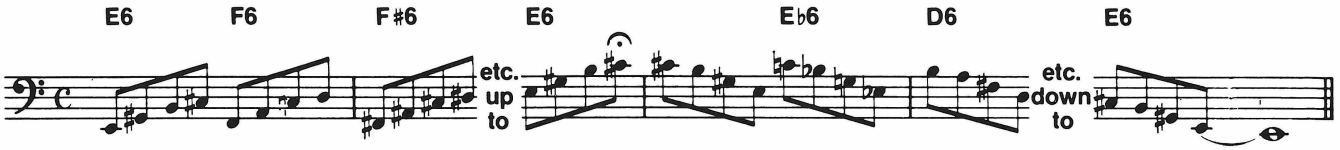
Spend a good week on A until it's memorized; then try it from *F* to *F*, *F*♯ to *F*♯, etc. Practice A, B, and C evenly in tempo.

Herb Mickman

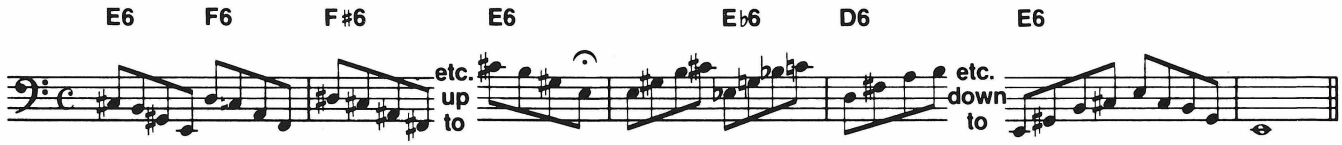
Example 1.



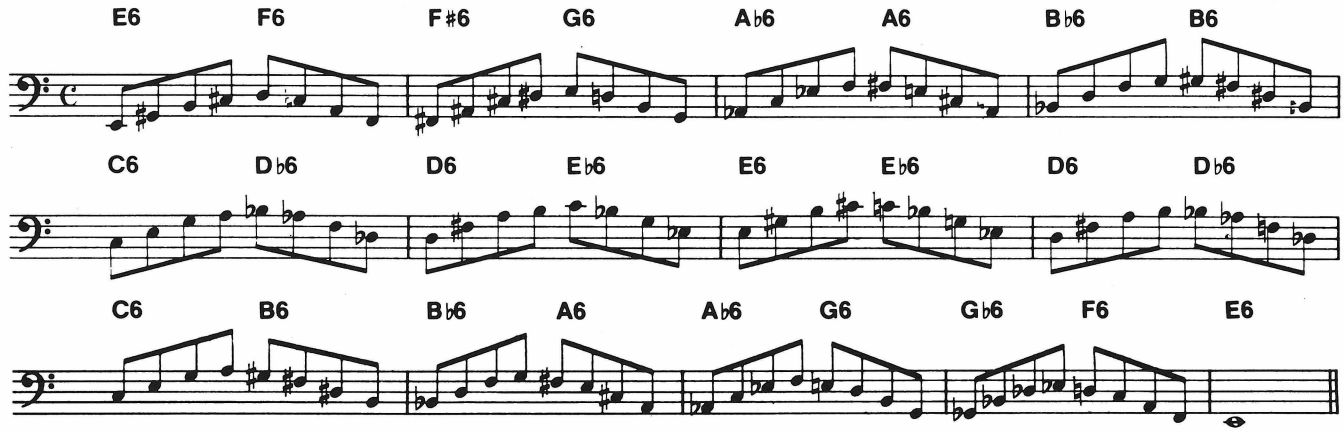
Example 2a.



Example 2b.



Example 2a.



UNDERSTANDING 9th CHORDS

I've illustrated ways to practice three-and four-note chords; now I'd like to explain *five*-note (9th) chords. I hope to clear up some cobwebs.

Ex. 1 shows a major scale and the location of the 9th—it's really the second note of the scale, but an octave higher. The 9th is one of the most common tones used to color a chord (make it sound richer), so we should become thoroughly acquainted with it. As shown in Ex. 1, the 9ths used with chords can be either major, lowered (major minus one half-step), or raised (a half-step larger than major).

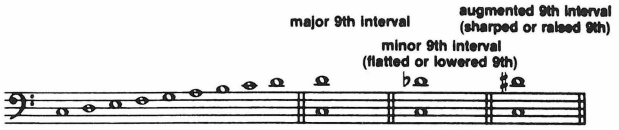
Ex. 2 shows how the 9th may be added to various four-note chords. The chords shown are only used to illustrate construction of 9th harmonies—they are not generally played in this register or with these voicings on the piano. I've put them down in the bass clef so you can see how all the various chords would be built over one root (*C*, in this case). Notice that in Ex. 2, only the major 9th is added to the four-note chords.

In Ex. 3 we see that both the dominant 7th and augmented 7th (a dominant 7th chord with a raised 5th) may have either a major, lowered, or raised 9th degree added on. Many times the exact type of 9th added to the basic 7th chord structure will be determined by the melody of the song; the 9th is often a melody note.

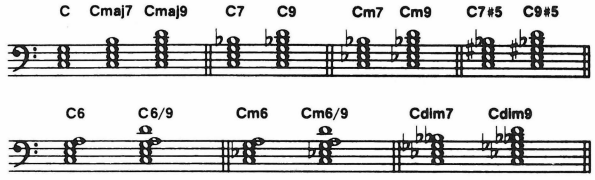
Study suggestions: Carefully analyze the chord constructions shown here; get to know their intervallic structure. Then take one type of 9th chord at a time and write it out in all 12 keys—in pencil and away from your bass. Follow the order of Ex. 4, where you'll also find the various ways these five-note chords are written in lead sheet shorthand.

Herb Mickman

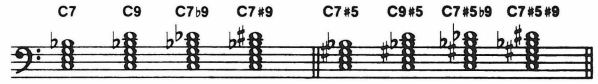
Example 1.



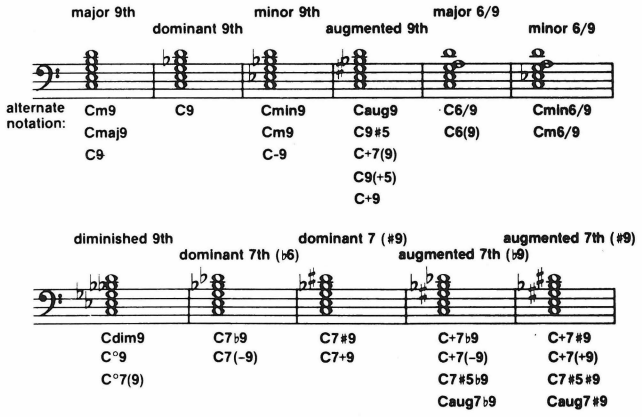
Example 2.



Example 3.



Example 4.



PRACTICING VARIETIES OF 9th CHORDS

Building a 9th chord means adding a fifth note to the top of a four-note 7th chord structure. The elements of the chord are then: root, 3rd, 5th, 7th, and 9th. Ex. 1 shows that several types of chords are possible when the 9th is major, that is, when there is an octave plus a whole-step between the root and the 9th.

Ex. 2 focuses on dominant 7th and augmented 7th chords with altered (i.e. lowered or raised) 9ths added to them. Since they are dissonant chords to begin with, the dominant 7th and augmented 7th will support high-powered altered 9th degrees quite well.

Here's a basic arpeggio practice pattern (Ex. 3): root, 3rd, 5th, 7th, 9th, 7th, 5th, 3rd, root. Try playing through it a few times, identifying each chord member as you go.

The next step is to apply this pattern to all the keys. In Ex. 4 we start on a low *Emaj9* and go up one octave higher by chromatic degrees (a half-step at a time). Then we come down by half-steps, ending on the low *Emaj9* again. In this manner we cover all 12 keys. You may wish to write out this chord sequence note for note, and then read and memorize it.

Ex. 5 reverses Ex. 4 by starting on the 9th, running the chord down to the root, and then back up to the 9th. Don't attempt Ex. 5 until you can play Ex. 4 from memory, evenly and in tempo. After you can do both patterns with major 9ths, try dominant 9ths, then minor 9ths, and all the other chord types pictured in Ex. 1. Mastering all this material could keep you busy for a year, so be patient. Don't expect it all to come in one afternoon.

Ex. 6 combines the ideas in Ex. 4 and Ex. 5: The first chord rises, while the following one (a half-step higher) comes down. The pattern ascends chromatically through an octave until you reach *Emaj9*; then it comes down in a similar manner, ending finally on the low *Emaj9*.

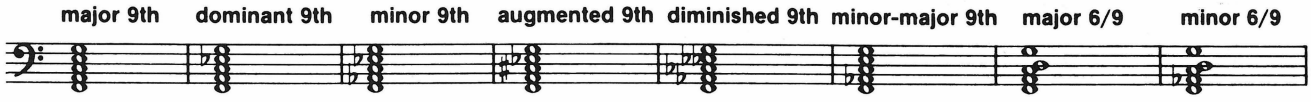
A thorough study of chords is a monumental undertaking, but I, for one, have gotten many benefits from the hundreds of hours put in. Because of this kind of practice, the notes for solos come to mind much faster, my ability to make up bass lines has improved considerably, and I find it possible to solo without having to hear any chordal accompaniment. Exercises such as these have deepened my fingerboard knowledge, too; I've learned where to find lots of note combinations that I might never have found just by trial and error on the bandstand. Practicing chords has also helped me see how some great soloists derive their ideas.

In Ex. 7 we find a few cliches on various 9th chords. These patterns should eventually be learned using all chords in all keys.

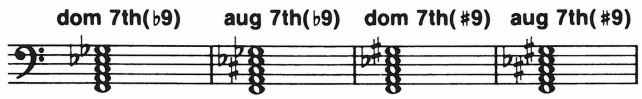
Ex. 8 shows that within each 9th chord there exist three triads. The three found in a dominant *7♭9* chord are a major triad and two diminished triads. The following exercise in 9/8 time will help you to hear the sound of the whole chord as well as the inner triad. Start doing this pattern with a low *Emaj9* and work your way chromatically up to the *Emaj9* one octave higher. Then try dominant 9ths and all the other chords in Ex. 1 and Ex. 2.

Herb Mickman

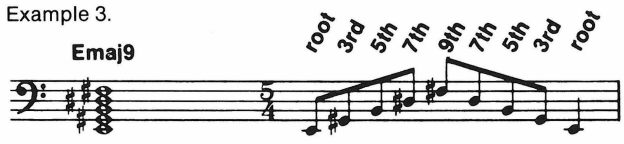
Example 1.



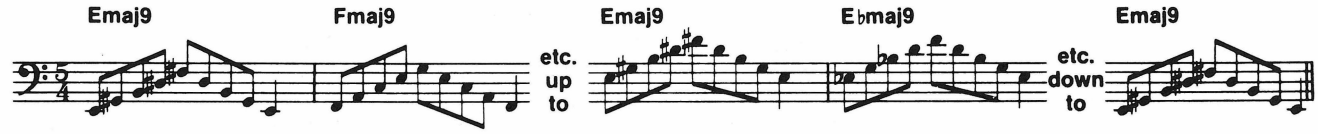
Example 2.



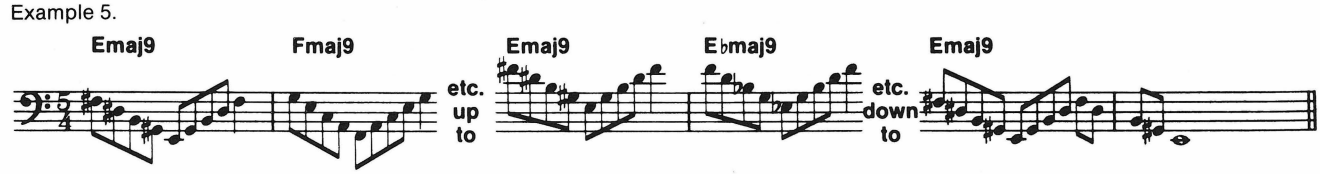
Example 3.



Example 4.



Example 5.



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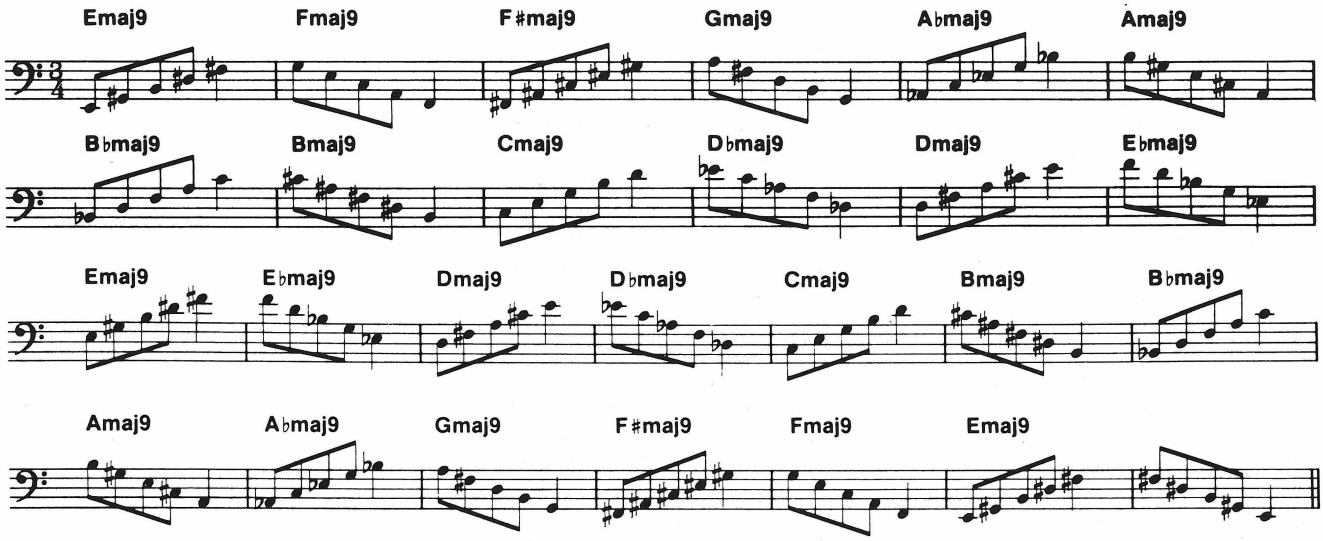
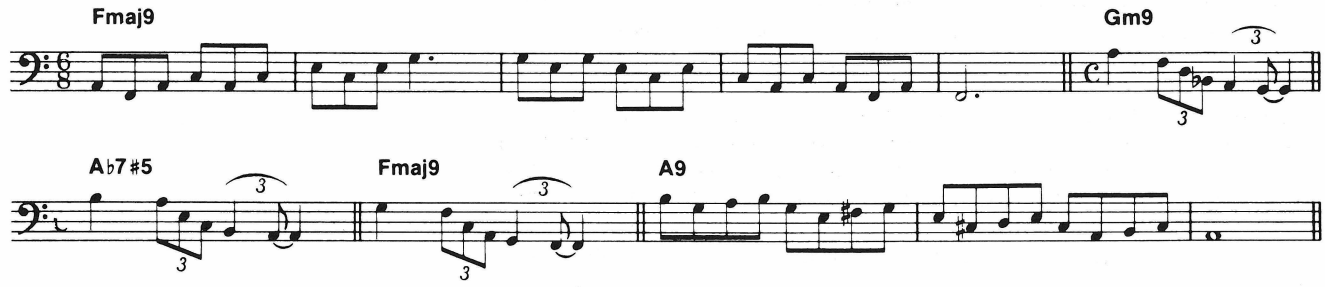
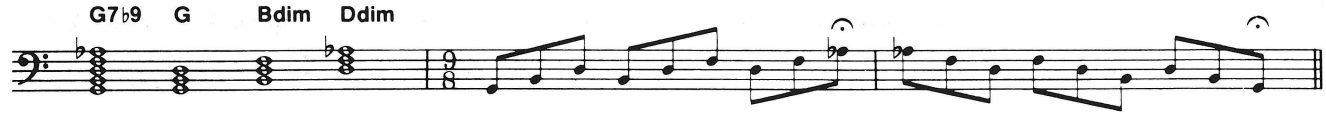


Example 7.



Example 8.



UNDERSTANDING 11th AND 13th CHORDS

About a year-and-a-half after I started playing the string bass, I began rehearsals with a 16-piece jazz band. The bass parts were about 70% chord reading and 30% notes (to be played exactly as written). I had some chord knowledge before starting on bass from several years of piano lessons, and I was familiar with most types of four-note chords (see Ex. 1).

However, when I saw symbols for 11th and 13th chords, I was not able to quickly figure them out. I decided to reduce all 11ths and 13ths down to 7th chords. My responsibility as a bassist was to play the roots on downbeats and a walking bass line with an even pulse. I learned a lot by reading the chord symbols.

Later on, I started to feel the limitations of my chord understanding. I began asking knowledgeable pianists a lot of questions about chords and did a lot of research. A year or so later I was able to expand my knowledge considerably by taking a few intense lessons with the late jazz bassist Charles Mingus. He opened a big door by showing me what to practice in order to expand my understanding of chords all over the fingerboard.

As I worked with more advanced players, I began to find out how certain chords I had learned in theory books were not constructed the same way in the contemporary music world. I'd like to explain why. Notice that the examples show the notes in the chord. They are not meant to be played together.

Before you tackle any five-, six-, or seven-note chords, it is absolutely imperative that you have a thorough understanding of four-note chords. Study all the chords in Ex. 1, noting their construction. Ex. 2 shows the various kinds of 9th chords. Ex. 3 demonstrates how we can build a four-note chord from a triad by adding the major 7th (in this case, *E*). If we add the 9th (*G*) to the *Fmaj7*, it becomes an *Fmaj9*.

Ex. 4a shows what happens when we add the 11th. This chord is called an 11th in some books, but it is not the 11th chord meant by chord symbols. The chord to its right is an *F11* (Ex. 4b). It is a dominant 9th with the added 11th on top. However, this chord is almost never used in this way. In an 11th chord, we omit the 3rd (as it clashes with the 11th on top, since an 11th is essentially a 4th—is only a half-step away from the 3rd).

Ex. 4c is a dominant 11th—also known as *F11*. Another way of thinking about a dominant 11th (or just plain 11th) chord is that it is a minor 7th chord that is a fifth higher over the root. In other words *Cm7* over *F* is an *F11*. In Ex. 5 we have another contemporary sound—*F*♯*11*♭*9* or a *C* half-diminished 7th over *F*. Ex. 6 shows a very common chord—the minor 11th (a minor 9th with the 11th added on top). Note that the 11ths in Ex. 4, 5, and 6 have been the perfect 11th (the fourth note of the scale, one octave higher).

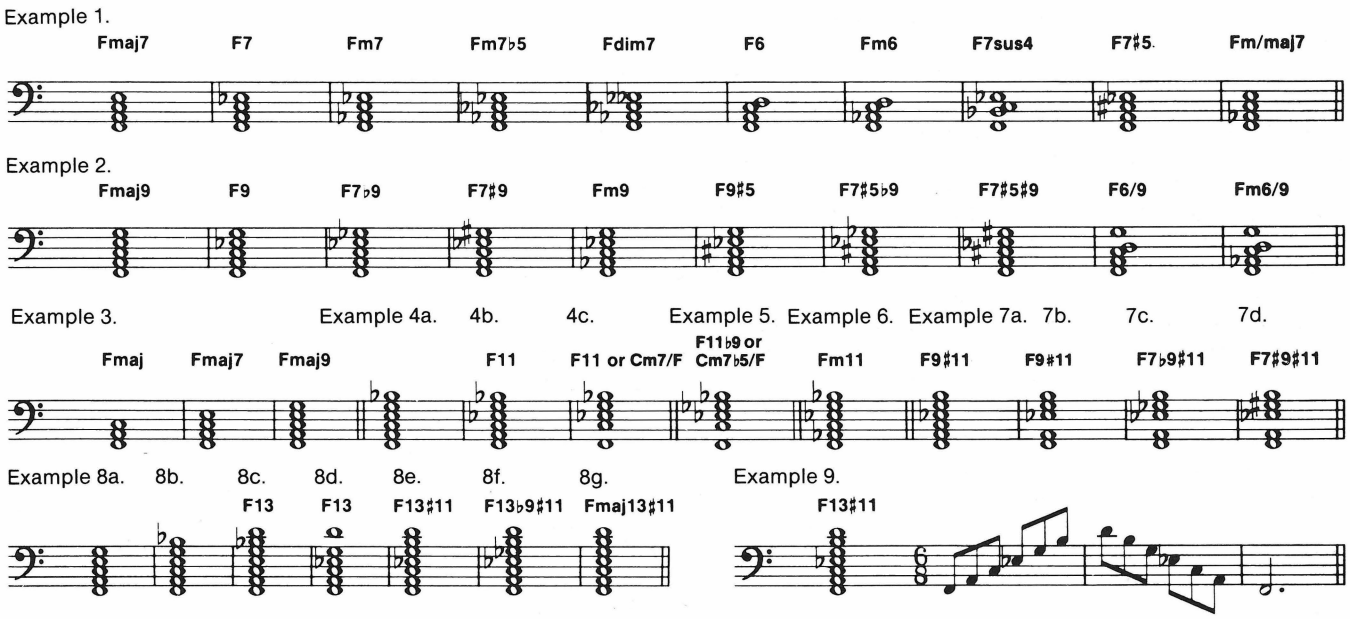
Now in Ex. 7 we are going to add the raised 11th (♯11) to a dominant 9th. In Ex. 7b I show how this sound is really used: We omit the 5th, since we would otherwise have a clash with the top *B* note (the 11th, or ♭5th of the chord). Ex. 7c shows the same chord with a lowered 9th (♭9). These are very common jazz sounds.

Ex. 8 takes us into the world of 13th chords. Ex. 8a is an *Fmaj9*, while Ex. 8b shows a chord that is rarely, if ever, used: the major 9th with the 11th on top. Ex. 8c is what seems to be a 13th chord. Not really! In the real world, we would omit the 11th from the 13th chord. Ex. 8d is a common dominant 13th chord (very commonly called *F13*) Very often the raised 11th is added to the 13th chord for color. Ex. 8e shows an *F13* with a raised 11th. Ex. 8f is the same *F13* with a lowered 9th and a raised 11th. Ex. 8g is a major 13th. It could also be thought of as a *Gmaj* triad over an *Fmaj7* chord.

Now that you've read all this technical information, what can you do to learn it? First, I would say, take each 7th chord in Ex. 1 and write it out in all keys—without the aid of a bass. Next, do the same with the 9th chords in Ex. 2. Then go through all the 11th chords in Ex. 4, 5, 6, and 7. Finally, write out all the 13th chords in Ex. 8.

This is only the start. To really know them, you must practice them in all keys up and down the fingerboard. I've covered exercises on triads, 7th chords, and 9th chords previously, so I won't illustrate them here. I hope you've been doing your homework. Ex. 9 shows an arpeggio pattern on a 13th chord. The example runs up and down an *F13* chord with a raised 11th. This concept can be applied to all the 11th and 13th chords shown here. Practice these chord types—they're an important part of a good understanding of bass technique. A lot of the so-called far-out improvisation comes from knowing and using the 11th and 13th chords, such as those shown on this page.

Herb Mickman



CHORD-MELODY FOR BASS

For as long as I've been playing bass, I've had a desire to find new and different ideas to apply to my instrument. This desire comes from my natural inquisitiveness when playing music and my great feeling of boredom hearing myself working through the same doo-doo over and over. In order to enlighten myself to the multitudes of possibilities, it became necessary for me to participate in as many musical situations and with as many musicians as I could.

Most notable in my background were associations with Steve Smith, who is now the drummer with Journey and a bandleader in his own right, pianist Gil Goldstein (formerly of drummer Billy Cobham's band; now living in Switzerland), guitarist Mike Stern, formerly with trumpeter Miles Davis, and guitarist Mick Goodrick (formerly with vibraphonist Gary Burton). For over eight years as a professional I've played with hundreds of the world's best musicians. But I owe my concept of time, melody, attitude, and chord sense to the four musicians named above. Finally Bill Bruford of King Crimson deserves mention for helping me to learn about stage presence, bass tone, and studio techniques (among other things).

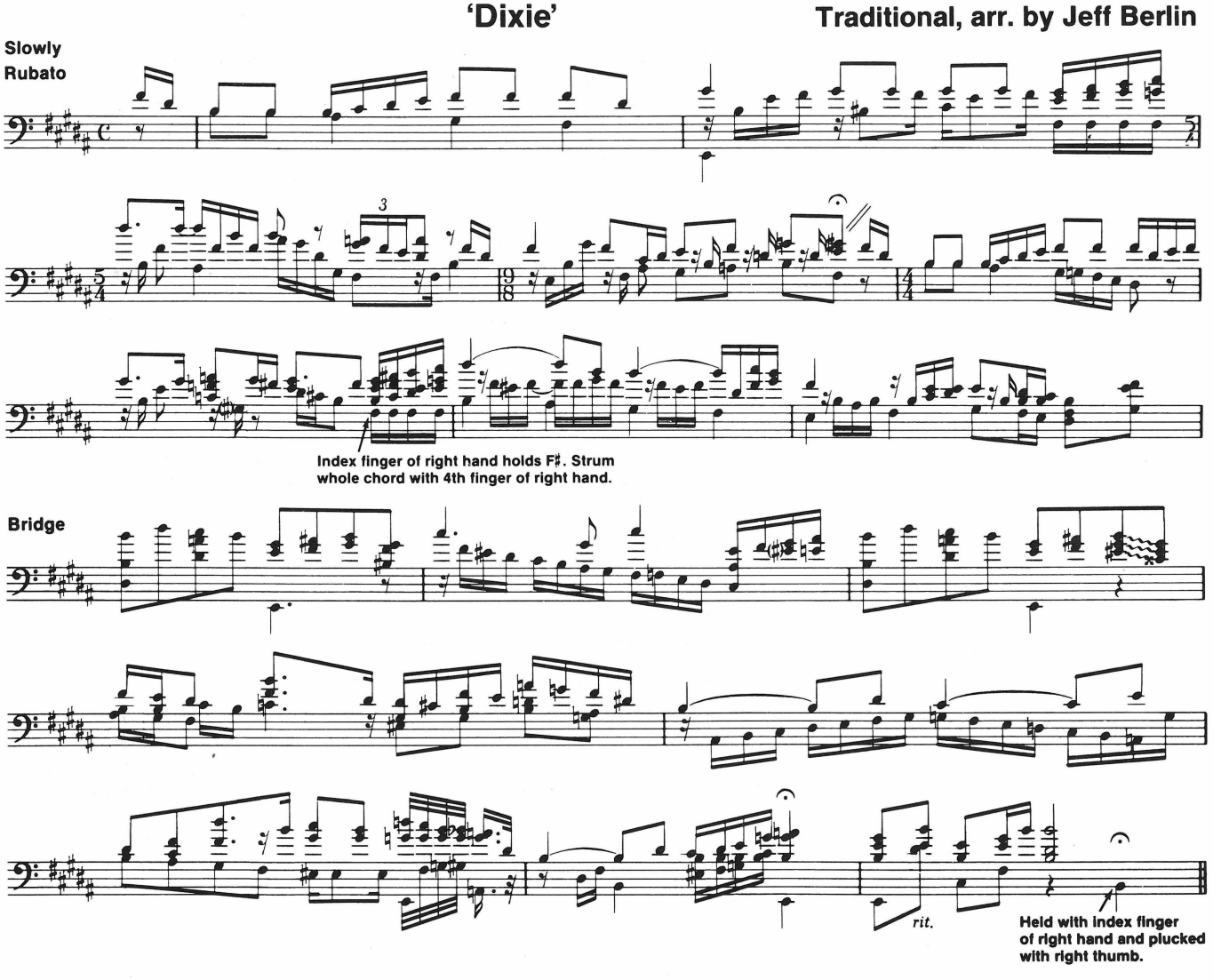
Since I am a product of my background and my collective musical input, I feel the desire to do new things on the bass. Keep in mind that although I'm always yakking about nonbass-like playing, the instrument is traditionally supposed to perform a root-note function within the rhythm section. Nothing wrong in this. Neal Stubenhaus, one of the West Coast's premier studio bassists, makes an excellent living by playing the bass the way God and Leo Fender intended. His time is great, his sound is great, and even though he's not into playing the bass with a lot of flash and speed, so what? He's the first-call guy in LA; he owns a home in the San Fernando Valley, and I rent. I drive my Maverick to the welfare office, and his chauffeur drives him to the 7-Eleven. "Hey, Neal, if you ever need a sub. . . ."

Below is my arrangement of the old southern tune "Dixie." Being bored with my own playing, I started using chords and counterpoint melodies when working alone, just to pass the time. My chordal sense became strong enough for me to use it when performing with I.O.U., Allan Holdsworth's band. Allan would solo, and I would supply bass notes and chords to fill up a lot of tonal areas, thereby making the group sound larger than an instrumental trio (actually it was a quartet, but the singer, Paul Williams, didn't play an instrument).

My rendition of the piece is in *B* major. Pay attention to the way the sharps, flats, and naturals are used in each bar. You will find some *B*#s and *E*#s, and one *C* double-sharp (the enharmonic equivalent of *D*) in the arrangement.

All right. Have fun, and hey, hey, hey—let's be careful out there!

Jeff Berlin



ABOUT THE AUTHORS

Jeff Berlin, still in his early thirties, has been playing bass for 18 years. Through his work with guitarist Allan Holdsworth, drummer Bill Bruford, sax man Dave Liebman, and keyboardist Patrick Moraz, he has become a major force in modern bass. Currently, Jeff is a member of Holdsworth's I.O.U. and fronts the Jeff Berlin Band. He also occasionally instructs at the Bass Institute of Technology in Hollywood.

Michael Brooks is a former Assistant Editor of Guitar Player Magazine.

Stanley Clarke is, arguably, the most popular bass guitarist in jazz history, through his work with Chick Corea in Return To Forever and his landmark approach to the bass as a solo instrument. He has also performed with Horace Silver, Gato Barbieri, Flora Purim, Pharoah Sanders, and Stan Getz and is a member of Guitar Player Magazine's Gallery of The Greats by virtue of five wins in the annual Reader's Poll.

Carol Kaye was one of Hollywood's premier studio bassists during the '60s and '70s. Her credits include hundreds of albums, soundtracks, and commercials. Among the many outstanding musicians she has been associated with are: Count Basie, Hampton Hawes, Roberta Flack, the Beach Boys, and Ray Charles. She has also authored a definitive series of bass instruction manuals for Gwyn Publications.

Herb Mickman has studied bass with several classical teachers and with jazz bassists Charles Mingus and Scott LaFaro. Since 1960 he has worked professionally with jazz and pop artists such as John Coltrane, Chick Corea, Jose Feliciano, Joe Pass, Tommy Dorsey, Barney Kessel, Woody Herman, Laurindo Almeida, Mundell Lowe, Kenny Burrell, and Carmen McRae.

Chuck Rainey has recorded with a staggering number of entertainers including Ray Charles, Cannonball Adderly, Aretha Franklin, and the Staples Singers. He's toured with such greats as Roberta Flack, Quincy Jones, and The Crusaders. Chuck also teaches, arranges and composes and has written an electric bass textbook called "Disciple of Emotion."

Richard Rose is a college instructor, free-lance journalist, and musician.

Ken Smith is a 32-year old bassist from New York who has been working professionally since 1968. He has performed with big bands and numerous vocalists, among them Isaac Hayes, Perry Como, and Johnny Mathis and has played on soundtracks and commercials. He is also a teacher and builds electric basses.

Larry Taylor is best known to blues fans for his association with Canned Heat and John Mayall but his credits also include stints with Jerry Lee Lewis and the Monkees, among others. He also has a background in classical bass.

Andy West is best known for his long time association with the Dregs with whom he recorded six albums. He is also a teacher and is well-versed in many musical styles.

Jon Sievert is the Staff Photographer for GPI Publications and has authored numerous articles for Guitar Player, Keyboard, Frets, and other music magazines.

ELECTRIC BASS DISCOGRAPHY

A selective listening to the albums listed below will give you an overview of the history of the electric bass in the hands of some of its finest practitioners. Thanks to Tom Mulhern and Cordell Crockett for their assistance in compiling this discography.

Berlin, Jeff
Bill Bruford,*Gradually Going Tornado*, Polydor 6261
Allan Holdsworth, *Road Games*, Warner Bros. 23959-1B.

Bogert, Tim
Cactus, *Cactus*, Atco SD 33340
Beck, Bogert & Appice, Epic KE 32140

Bruce, Jack
Cream, *Wheels Of Fire*, RSO 2671
Jack Bruce, *Songs For A Tailor*, Atco 33306

Casady, Jack
Jefferson Airplane, *Surrealistic Pillow*, RCA LSP 3766
Hot Tuna, *Hot Tuna*, RCA LSP 4353

Clarke, Stanley
Journey To Love, Epic 36974
School Days, Epic 36975

Collins, Bootsy
Bootsy's Rubber Band, *Bootsy, Player Of The Year*, WB K-3093.
Funkadelic, *Hardcore Jollies*, Warner Bros. B-2973

Dunn, Donald "Duck"
The Best of Booker T. & The MGs, Atlantic SD 8202
Albert King, *Born Under A Bad Sign*, Stax S723

Entwistle, John
The Who, *Live at Leeds*, MCA 3023
The Who, *Tommy*, MCA 2-1005

Graham, Larry
Sly And The Family Stone, *Greatest Hits*, Epic 30325
Graham Central Station, *Release Yourself*, Warners B-2814

Harris, Steve
Iron Maiden, *Iron Maiden*, Harvest 12094
Iron Maiden, *Killers*, Harvest 12141

Hood, David
Staple Singers, *Staple Singers*, Stax 1029
Millie Jackson, *Feelin' Bitchy*, Spring 6715

Jamerson, James
Motown Story (5-record boxed set) Motown, MS-5-726
Shotgun, Jr. Walker & The All-Stars, Soul, SLP-701

Jemmott, Jerry
B.B. King, *Completely Well*, ABC 868
King Curtis, *Live At Fillmore*, Atco 33359

Johnson, Louis
Brothers Johnson, *Look Out For No. 1*, A&M
Brothers Johnson, *Blam*, A&M

Kaye, Carol
Joe Cocker, *With A Little Help From My Friends*, A&M 4182
Beach Boys, *Good Vibrations*, Reprise 6484

Lee, Geddy
Rush, *Archives*, Mercury SRM39200
Rush, *Exit Stage Left*, Mercury

McCartney, Paul
Beatles, *Rubber Soul*, Capitol 2442
Beatles, *Sgt. Pepper*, Capitol 2653

Pastorius, Jaco
Weather Report, *Heavy Weather*, CBS 34418
Jaco Pastorius, Epic PE 33949

Rainey, Chuck
Sonny Rollins, *Nucleus*, Milestone 9064
Albert King, *Truckload of Lovin'*, Utopia BULI-1387

Shakespeare, Robbie
Peter Tosh, *Bush Doctor*, Rolling Stones Records COC 39109
Bunny Wailer, *Protest*, Island ILPS

Sheehan, Billy
Talas, *Sink Your Teeth Into That,* Relativity Records (Dist. by Important, 149-03, New York Blvd., Jamaica, NY 11434) EMCL-1

Squire, Chris
Yes, *Fragile*, Atlantic 19132
Yes, *Close To The Edge*, Atlantic 19133

Sting (Gordon Sumner)
Police, *Regatta De Blanc*, A&M 4753
Police, *Ghost In The Machine*, A&M 3730

Vitous, Miroslav
Weather Report, *Weather Report*, CBS 30661
Miroslav Vitous, *Mountain In The Clouds*, Atlantic SD 1622

West, Andy
The Dixie Dregs, *Free Fall*, Capricorn 0189
The Dregs, *Dregs of the Earth*, Arista 9528

Wetton, John
King Crimson, *Larks Tongues In Aspic*, Atlantic 7263
King Crimson, *Starless & Bible Black*, Atlantic 7298

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With contributions by Carol Kaye, Chuck Rainey, Stanley Clarke, Herb Mickman, Jeff Berlin, Michael Brooks, Ken Smith, and the editors, designers, and staff of Guitar Player Magazine.

0 73999 00689 00292

ISBN 0-88188-292-5

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